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ABSTRACT

A background paper on long-range enrollment and facilities planning in California's public segments of higher education is designed to: (1) establish a policy framework within which the Postsecondary Education Commission can examine and assess the planning processes of the segments; and (2) describe the processes, identifying major differences among the segments for short-term enrollment planning as utilized for the annual state budgeting process, long-range enrollment planning as utilized for state capital outlay and institutional long-range planning purposes, and ongoing capital outlay planning. Major sections take up the following topics: a policy context for the Commission's planning priorities; population projections through 2020; long-range enrollment projections (background, recent projections, demography, and enrollment projection methodologies); segmental enrollment planning (California Community Colleges, California State University, and University of California); capital outlay planning; and state budgeting (e.g., power of the executive, workload formulae, and the state capital outlay process). Conclusions are offered regarding long-range planning activities of the segments, enrollment planning, capital outlay planning, and state budget and capital outlay approval. Nine appendices focus on such topics as: differences in mission and size among the three public segments; methodology for projecting population for California by race/ethnicity with age/sex detail 1980-2020; and kindergarten through 12th grade enrollment and high school graduation projections conducted by the demographic research unit. (SM)

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PLANNING OUR FUTURE

A Staff Background Paper on Long-Range Enrollment and Facilities Planning in California Public Higher Education

CALIFORNIA POSTSECONDARY EDUCATION COMMISSION

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Summary

This background paper on long-range enrollment and facilities planning in California's public segments of higher education was prepared by Kirk L. Knutsen of the Commission staff with the assistance of Wanda Yanez, a student intern at the Commission.

The paper has two primary purposes:

1. To establish a policy framework within which the Commission will examine and assess the planning processes of the segments; and
2. To describe the processes and identify the major differences among the segments for (1) short term enrollment planning, as utilized for the annual State budgeting process, (2) long-range enrollment planning, as utilized for State capital outlay and institutional long-range planning purposes, and (3) ongoing capital outlay planning.

Part One of the paper explains the reasons for the Commission's interest in long-range planning. Part Two offers an overview of planning priorities and problems. Parts Three and Four discuss population projections for California through the year 2020 and long-range enrollment projections for California's three segments of public higher education -- the University of California, the California State University, and the California Community Colleges. Parts Five and Six explain the segments' enrollment and capital outlay planning processes; Part Seven describes the State budgeting process for the segments; and Part Eight offers ten conclusions about all of these processes.

The Commission discussed this paper at its meeting on March 21, 1988. Additional copies of the report may be obtained from the Library of the Commission at (916) 322-8031. Questions about the substance of the report may be directed to Mr. Knutsen at (916) 322-8013.

PLANNING OUR FUTURE

A Staff Background Paper on Long-Range Enrollment and Facilities Planning in California Public Higher Education

CALIFORNIA POSTSECONDARY EDUCATION COMMISSION
Third Floor • 1020 Twelfth Street • Sacramento, California 95814-3985

COMMISSION REPORT 89-15
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THIS is one in a series of staff reports on important issues affecting California postsecondary education. These reports are brought to the California Postsecondary Education Commission for discussion rather than for action, and they represent the interpretation of the staff rather than the formal position of the Commission as expressed in its adopted resolutions and reports containing policy recommendations.

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1 *Introduction*

Background to the Commission's involvement in long-range planning

Section 66903 of the California Education Code (Display 1, pp. 3-4) authorizes the California Postsecondary Education Commission to collaborate with the public segments on long-range planning and requires the segments to develop long-range plans that identify the need for and location of new facilities. The Commission also has responsibility for approving sites for new campuses and off-campus centers.

In addition to this statutory authorization for the Commission's involvement in long-range planning, both the Commission for the Review of the Master Plan and the Legislature's Joint Committee for Review of the Master Plan have recently recommended a reinvigorated statewide planning process to be managed by the Postsecondary Education Commission (July, 1987, p. 40). The Master Plan Review Commission, in its 1987 final report, recommended:

> 24. The California Postsecondary Education Commission shall have the following responsibilities with regard to long-range planning in consultation with the segments: (1) development of a common definition of long-range planning; (2) development of a common set of assumptions upon which such planning is to be based; (3) review of segmental activities to verify that they periodically prepare and update long-range plans based upon the common set of assumptions; and (4) annual preparation of detailed 20-year projections of postsecondary enrollment in the public and private sectors at all levels of instruction, built upon the projections prepared by the Department of Finance.

Response of the Commission

In order to more fully examine these issues and define its own role in long-range planning, in September 1987, the Commission formed an Ad Hoc Committee on Long-Range Planning to review the recommendations of the Master Plan Review Commission within the context of the Postsecondary Commission's overall planning priorities. The Ad Hoc Committee presented its final report to the Postsecondary Commission on May 2, 1988, in which it concluded that the urgency of the planning priorities facing the State requires the Commission to assume an active role in long-range planning, although one somewhat different than that suggested by the Master Plan Review Commission. The Ad Hoc Committee viewed this as necessary because it came to the conclusion that uniformity of enrollment projection methodologies and long-range planning approaches, while relevant, is less important than ensuring that the segments' projection methodologies are reasonable, compatible where appropriate, and that their planning capacities are adequate and geared to the particular needs of the segments. The Committee also sensed that a protracted debate about methodology and definitions would not be the most efficient or effective way to lead the process.

The Ad Hoc Committee identified three major roles for the Commission to play in the area of long-range enrollment and facilities planning -- research, coordination, and leadership.

- Its research responsibility centers on the integration of existing information as well as the development of new data, as necessary, relating to long-range enrollment and facilities planning.
- Its coordination responsibility centers on establishing a dialogue between the segments that will allow a careful examination of the cumula-

tive effects of individual segmental plans, in a statewide context.

- Its responsibility of leadership centers on stimulating a focused and productive statewide debate over the major planning and policy issues surrounding long-range enrollment and facilities planning.

It is the Commission's view that in this leadership role, it should seek to support a dynamic and multidimensional planning capacity among the segments. This stems from the presumption that an adequate and effective planning capacity is central to the ability of the segments to perform a variety of other management functions, including the ability to effectively articulate current and future needs.

Adding to the call for the Commission to take a lead role in long-range enrollment and facilities planning, the Legislature enacted Supplemental Budget Language in June 1988 directing the Commission to initiate its long-range planning process by developing recommendations for the Legislature and the Governor on policy variables that will influence the need for and costs of new facilities through the year 2005 (Display 2, pp. 4-5).

Origins of the background paper

As a result of these internal and external calls for an expanded planning role for the Commission, in June 1988 the Commission embarked on a major study of long-range enrollment and facilities planning to:

1. Identify the factors that will influence demand for new postsecondary education facilities over the next 20 years;
2. Identify and analyze those variables which are susceptible to State-level policy control; and
3. Provide the Legislature and the Governor with recommendations on the direction the State should take with respect to the major factors that will shape the need and cost of new facilities through the year 2005.

The Commission authorized staff to proceed with the project based on the staff's "Prospectus for a Study of Long-Range Enrollment and Facilities Planning in California Higher Education" (Appendix A, pages 55-58) of June 1988. As a first step in the project, the staff sought to compile the most accurate and recent information available on the methodologies and processes currently employed by the relevant government and educational entities with respect to enrollment and facilities planning in California postsecondary education.

As the product of that initial background work, this paper aims to establish a common understanding of the framework within which enrollment and facilities planning currently occurs in the public segments of California's postsecondary education system. Specifically, the purposes of this background paper are two:

1. To establish a policy framework within which the Commission will examine and assess the planning processes of the segments; and
2. To describe the processes and identify the major differences among the segments for (1) short-term enrollment planning, as utilized for the annual State budgeting process, (2) long-range enrollment planning, as utilized for State capital outlay and institutional long-range planning purposes, and (3) ongoing capital outlay planning.

DISPLAY 1 Section 66903, California Education Code

The commission shall have the following functions and responsibilities in its capacity as the statewide postsecondary education planning and coordinating agency and adviser to the Legislature and Governor:

1. It shall require the governing boards of the segments of public postsecondary education to develop and submit to the commission institutional and systemwide long-range plans in a form determined by the commission after consultation with the segments.

2. It shall prepare a five-year state plan for postsecondary education which shall integrate the planning efforts of the public segments and other pertinent plans. The commission shall seek to resolve conflicts or inconsistencies among segmental plans in consultation with the segments. If such consultations are unsuccessful the commission shall report the unresolved issues to the Legislature with recommendations for resolution. In developing such plan, the commission shall consider at least the following factors: (a) the need for and location of new facilities, (b) the range and kinds of programs appropriate to each institution or system, (c) the budgetary priorities of the institutions and systems of postsecondary education, (d) the impact of various types and levels of student charges on students and on postsecondary educational programs and institutions, (e) appropriate levels of state-funded student financial aid, (f) access and admission of students to postsecondary education, (g) the educational programs and resources of private postsecondary institutions, and (h) the provisions of this division differentiating the functions of the public systems of higher education.

3. It shall update the state plan annually.

4. It shall participate in appropriate stages of the executive and legislative budget processes as requested by the executive and legislative branches and shall advise the executive and legislative branches as to whether segmental programmatic budgetary requests are compatible with the state plan. It is not intended that the commission hold independent budget hearings.

5. It shall advise the Legislature and Governor regarding the need for and location of new institutions and campuses of public higher education.

6. It shall review proposals by the public segments for new programs and make recommendations regarding such proposals to the Legislature and the Governor.

7. It shall, in consultation with the public segments, establish a schedule for segmental review of selected educational programs, evaluate the program review processes of the segments, and report its findings and recommendations to the Governor and the Legislature.

8. It shall serve as a stimulus to the segments and institutions of postsecondary education by projecting and identifying societal and educational needs and encouraging adaptability to change.

9. It shall develop and submit plans to the Legislature and the Governor for the funding and administration of a program to encourage innovative educational programs by institutions of postsecondary education.

(continued)

DISPLAY 1 (continued)

10. It shall collect or conduct or both collect and conduct studies of projected manpower supply and demand, in cooperation with appropriate state agencies, and disseminate the results of such studies to institutions of postsecondary education and to the public in order to improve the information base upon which student choices are made.

11. It shall periodically review and make recommendations concerning the need for and availability of postsecondary programs for adult and continuing education.

12. It shall develop criteria for evaluating the effectiveness of all aspects of postsecondary education.

13. It shall maintain and update annually an inventory of all off-campus programs and facilities for education, research, and community service operated by public and private institutions of postsecondary education.

14. It shall act as a clearinghouse for postsecondary education information and as a primary source of information for the Legislature, the Governor, and other agencies, and develop a comprehensive data base insuring comparability of data from diverse sources.

15. It shall establish criteria for state support of new and existing programs, in consultation with the public segments, the Department of Finance, and the Joint Legislative Budget Committee.

16. It shall comply with the appropriate provisions of the Education Amendments of 1972 (P.L. 92-318) as specified in Section 67000.

17. It shall consider the relationships between academic and occupational and vocational education programs and shall actively encourage the participation of state and local and public and private persons and agencies with a direct interest in these areas.

DISPLAY 2 *Supplemental Budget Language Item 6420-001-001 (California Postsecondary Education Commission - Support)*

In order to ensure that State decisions about new postsecondary facilities are consistent with State policy on access, equity, and choice and take into account total demand and total resource availability, the State hereby directs the California Postsecondary Education Commission, in cooperation with the public and private postsecondary segments and in conjunction with the appropriate State fiscal agencies, to develop recommendations to the Legislature and the Governor on policy variables that will influence State costs for new facilities through the year 2005. For the purpose of this item, new facilities shall be defined as: expansion of individual campuses, construction of new campuses, off-campus centers, or other such expansion to accommodate increased enrollments.

The California Postsecondary Education Commission shall, by December 1989, develop recommendations to the Governor and the Legislature on major policy variables that will shape the costs of new facilities. These shall include recommendations on the following:

1. Educational and fiscal policy variables to be used in selecting locations for new facilities, including an analysis of the relative costs of accommodating expansion on facilities at new sites relative to expansion of existing campuses, as well as the costs of expanding access to public postsecondary education.

2. Educational and fiscal policy variables influencing need for new facilities by age of student and academic program type, including when traditional campus facilities are academically required, when nontraditional facilities can best meet demands for access and quality, and whether expanded access to instructional computing or other emerging or nontraditional technologies can replace need for on-site instructional facilities;

3. Space and utilization standards for public postsecondary education;

4. Cost savings possible through use of year-round operations; and

5. Priorities for construction of new sites by geographic region of the State.

These criteria shall be developed pursuant to the review by the Commission of enrollment projections for public postsecondary education through the year 2005. The review shall include available enrollment projections from the Department of Finance and those developed by the public segments. The Commission shall convene a facilities planning advisory group, to include representatives from the Department of Finance, the University of California, the California State University, the California Community Colleges, the Association for Independent California Colleges and Universities, the Department of Finance and the Office of the Legislative Analyst, for the purpose of consultation and advice on these recommendations.

Item 6440-001-001 (University of California, Main Support)

The Regents of the University of California are requested to prepare statewide projections of demand for undergraduate and graduate enrollments through the year 2005. These projections shall then become the basis for the development of a statewide plan for accommodating enrollment demand through the year

(continued)

DISPLAY 2 (continued)

2005, including plans for expansion of individual campuses and construction of new campuses, off-campus centers, or other such expansion to accommodate increased enrollments. These plans are to be submitted by December 1990 to the State Department of Finance and the Legislative Analyst for comment and review as well as to the California Postsecondary Education Commission for review and comment before being submitted to the Governor and the Legislature.

Item 6610-001-001 (California State University, Main Support Budget)

The Trustees of the California State University are requested to prepare statewide projections of demand for undergraduate and graduate enrollments through the year 2005. These projections shall then become the basis for the development of a statewide plan for accommodating enrollment demand through the year 2005, including plans for expansion of individual campuses and construction of new campuses, off-campus centers or other such expansion to accommodate increased enrollments. These plans are to be submitted by December 1990 to the State Department of Finance and the Legislative Analyst for comment and review as well as to the California Postsecondary Education Commission for review and comment before being submitted to the Governor and the Legislature.

Item 6870-001-001 (Community Colleges Board of Governors, Main Support Item)

The Board of Governors is requested to prepare statewide projections of demand for Community College credit and non-credit enrollments through the year 2005. These projections shall then become the basis for the development of a statewide plan for accommodating enrollment demand through the year 2005, including plans for growth at individual districts, as well as construction of new centers, campuses, or other such expansion to accommodate increased enrollments. These plans are to be submitted by December 1990 to the State Department of Finance and the Legislative Analyst for comment and review as well as to the California Postsecondary Education Commission for review and comment before being submitted to the Governor and the Legislature.

2 A Policy Context for the Commission's Planning Priorities

IN order to establish a policy context within which the Commission can identify and evaluate the similarities and differences in the planning processes of the segments, the following paragraphs outline the general uses to which institutional planning can and should be put, as well as some of the characteristics of effective short- and long-range planning. This discussion should not be considered prescriptive or definitive, however; in fact, to do so would run contrary to the fluid and responsive approaches necessary for effective planning. Rather, the following discussion should be viewed as a general exposition of the importance of planning to the ability of a segment to set and meet its short- and long-range goals.

Caveats about planning

Certain dangers are inherent in overreliance on the "plans" generated by long-range planning activities. No matter how effective and comprehensive the planning process, the plans it generates will (and should) evolve as time goes on, when better and more recent information is introduced into the process. The essential frame of reference, therefore, is the view that the planning process itself, rather than the plans it generates, is the essential product of good planning. As Dwight D. Eisenhower said: "Plans are nothing. Planning is everything."

While self-evident, one additional factor must be carefully considered when examining and making judgments about segmental planning efforts: The segments differ dramatically with regard to size, clientele, and institutional mission (Appendix B). These differences in size and mission may appropriately manifest themselves in substantial disparities in the specific planning approaches pursued by the segments.

For example, it may be that the management complexities associated with administering the 70-district, 107-campus Community College system require a somewhat more centralized planning approach than is necessary in the nine-campus University of California system. These differences must be recognized by State-level policymakers, and in some cases encouraged.

As noted earlier, uniformity of approach in planning is not nearly so important as ensuring that each segment possesses an adequate planning capacity that is structured to address and articulate the unique needs and goals of that system. As a result of these fundamental differences, the Commission must be careful in its analysis to avoid the trap of making comparisons of planning processes across segmental lines that may not be appropriate or useful.

Commonalities of planning

With these caveats firmly in mind, the Commission still believes that adequate and effective planning capacities are central to the ability of all the segments to perform a wide variety of management functions, including the capacity to effectively articulate current and future needs. For this to occur, and regardless of the specific structure employed to achieve it, planning must take place on several institutional levels, and the information gleaned from planning should be utilized in a variety of ways to support and augment numerous aspects of institutional management.

Starting from this premise, several commonalities become evident when examining successful institutional planning efforts. These similarities are not specific prescriptions on how to plan, but rather represent the general features of a planning process that serve to encourage and reinforce the sort of integrated, multidimensional perspective toward planning mentioned above:

1. *Projection of future trends*

In its simplest form, planning is an effective tool for establishing quantitative estimates of a variety of important factors such as future enrollments, future physical plant needs, personnel trends, and the like. This sort of institutional research is central to the planning process, not only because of the value of the information it generates, but often because of the iterative process employed to determine which questions should be asked.

The Commission examines this portion of the segments' planning activities to ensure that the segmental projections being conducted are reasonable and, where appropriate, comparable between segments.

2. *Establishment and evaluation of program and institution-wide goals*

The merging of departmental and institutional academic objectives with quantitative trend data allows those involved in planning to establish realistic and attainable goals and objectives. In this dimension of planning, the process of goal-setting operates on a broad conceptual level, distinct from the specific strategies designed to accomplish the goals.

The Commission examines this aspect of the segments' planning processes to ensure that an appropriate linkage exists to integrate major statewide educational goals (e.g., accommodation of eligible applicants, achievement of educational equity goals, maintenance of educational excellence, etc.) into the goal setting processes of both individual departments and entire institutions. Conversely, this examination will also review and comment on the extent to which institutional goal-setting recognizes and supports the unique local objectives of individual campuses and departments.

3. *Institutional assessment in relation to goals*

It is difficult, if not impossible to plan for the future if an institution does not know where it is in the present. Planning is therefore an important mechanism not only for assessing future needs and articulating future plans but also for evaluating and defining where an institution currently stands. Planning can and should be viewed as an important mechanism through which institutions can integrate a systematic assessment of current needs and priorities with State and institutional policy directions for the future.

Similar to Item 2, the Commission examines this aspect of institutional planning in order to determine the extent to which program review and institutional assessment is being informed and guided by the broad educational goals and objectives operating at the systemwide and statewide levels, while at the same time preserving the degree of local autonomy and discretion necessary to ensure that individual programs and campuses are cognizant of, responsive to, and supported in addressing the unique circumstances in which they find themselves.

4. *Assessment and articulation of present and future resource needs*

It is the Commission's view that the most effective planning processes create a vital analytic base on which the program and resource needs of individual departments and entire institutions can be grounded. The justification for present program and resource needs is sounder and more persuasive when placed in a context, not only of what is necessary to provide current levels of service, but also of what is required in the present to ensure that the department or institution is where decisionmakers want them to be at some point in the future. In addition, effective planning allows institutions to provide "advance warning" to decisionmakers about likely future resource requirements, enhancing the credibility of proposals when they are made and hence, increasing the likelihood of their eventual adoption.

In this area, the Commission examines the planning efforts of the segments to determine the extent to which both the short- and long-range resource needs of the segments are integrated and justified as a means of achieving clearly articulated long-range institutional and statewide goals. Accommodating projected enrollments, increasing student retention, achieving educational equity, and improving educational quality are examples of broad institutional goals which can and should be directly

incorporated into short- and long-range assessments of the resource needs of the segments.

5. *Strategy setting*

Effective institutional planning often comprises the crucial link between broadly stated academic and other institutional goals and the development of specific strategies needed to achieve them. Strategy setting can also serve as the setting in which departments and institutions plan on how to narrow the gap between program and institutional goals and the resources required to achieve them. In this context, the planning process also serves as the hub around which the different program and administrative components of an institution (faculty, finance, facility planning, etc.) come together to ensure that the translation of goals into strategies occurs in an integrated environment, with all relevant operational and administrative units playing important roles.

The Commission examines this aspect of institutional planning in order to assess the extent to which the development of specific program and institutional strategies is linked to broad program, institutional, and statewide goals of the kind outlined previously. Further, the staff will attempt to assess the extent to which the process of strategy setting involves the wide variety of campus and systemwide constituencies necessary to ensure that a broad-based, institutionwide perspective is brought to bear on this critical phase of the planning process.

6. *Planning as an integrated management tool*

Through integration of planning with ongoing program review and evaluation and the short-term budgetary and management processes of an institution, long-range planning is informed by the latest assessment of the status of the institution, and the evaluative and short-term management processes are informed by a better understanding of the long-range goals of the institution. The integrated planning approach also helps ensure that the planners are aware, as soon as possible, of any deviations in projected enrollment, budgetary, and personnel trends.

This aspect of the Commission's analysis focuses on the level of integration achieved in the segments' individual planning processes, with special emphasis placed on documenting the extent to which statewide planning is informed by the local circumstances of individual departments and campuses, and the extent to which local departmental and institutional planning is informed by broad systemwide and statewide goals of the type outlined above.

7. *State-level influences on institutional planning activities*

While the external influences brought to bear on institutions by the State Legislature, the Governor, and various State agencies are not part of the planning processes of the segments per se, they stand as a stark reminder that institutional planning is not conducted in a vacuum. With this in mind, the Commission's examination of the planning activities of the segments is proceeding alongside of a careful assessment of the statutes, policies, practices, and traditions imposed at the statewide level that may have positive or detrimental effects on the planning processes of the segments.

In this area, the Commission seeks to identify any official or unofficial constraints on segmental behavior, imposed at the statewide level, which serve to compel or encourage institutional activity which is inconsistent with either effective planning or the achievement of broadly accepted educational goals. For example, if some aspect of the State budget process creates disincentives for a segment to conduct long-range fiscal planning, the staff would hope to identify those factors in this portion of its analysis.

Summary

From the Commission's view, it is not essential, and maybe not even possible, for all three segments to undertake planning for all the purposes previously outlined. But as the Commission examines the specific enrollment and facilities planning processes of the segments, it assumes that, especially in an era of growth, the segments should have a

roughly equivalent capacity, or at least the choice to have the capacity, to perform integrated planning in a manner similar to that described above. To do any less would be to cheat both the segments and the State's educational policymakers out of important insights into the possible options for California postsecondary education in the twenty-first century.

3 *Population Projections*

THE crucial building block for almost all enrollment projections conducted in California is State population estimates. Since almost all aspects of institutional planning eventually rely to some degree on projections of future enrollments, it is essential that the Commission and segments have a high level of understanding and confidence in the population estimates on which those enrollment projections are based.

California's population projecting unit

Section 13073.5 of the Government Code declares that:

> (1) population size and distribution patterns in California exert a major influence on the physical, social, and economic structure of the state and on the quality of the environment generally; (2) sound and current data and methods to estimate population trends are necessary to enable state, regional, and local agencies to plan and function properly; and (3) there is a critical need for a proper study of the implications of present and future population trends in order that state, regional, and local agencies might develop or reexamine policies and actions based thereon.

The Legislature has charged the Demographic Research Unit within the Department of Finance to fill these needs as the State's single official demographic agency. Under Section 13073 of the Government Code, the Unit is to provide adequate demographic data to aid effective State and local planning and policymaking and to serve all levels of government and the private sector as the centralized source of demographic data. Thus the Unit is named as the primary State government liaison with the U.S. Bureau of the Census in the acquisition and distribution of census data and related documentation to State agencies, in addition to its many other duties.

Appendix C describes the methodology employed by the Unit to prepare its statewide population estimates.

Population projections through 2020

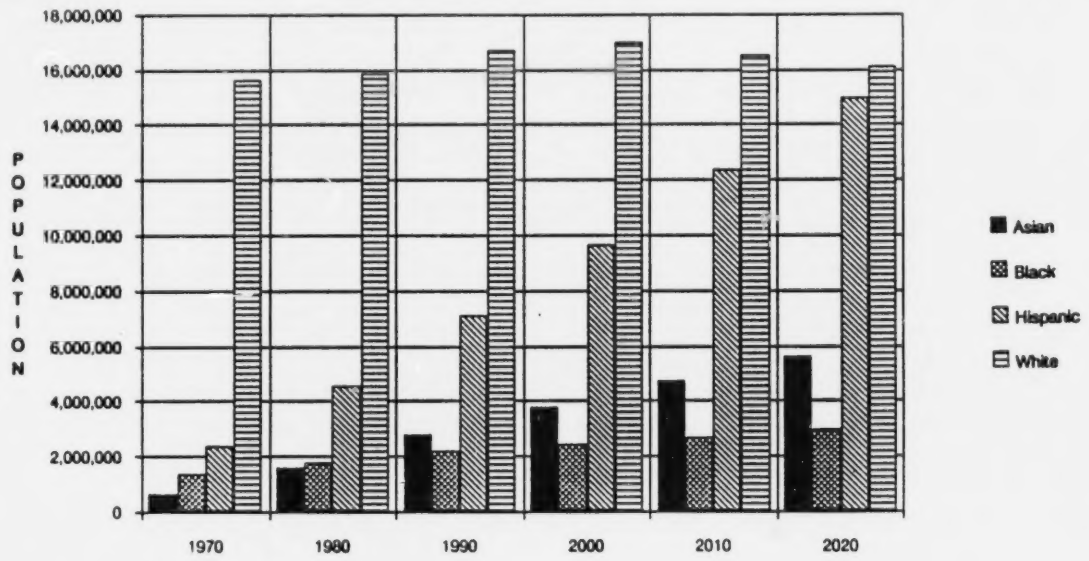
The most recent population projections released by the Demographic Research Unit reconfirm that the watchwords for California's changing population are diversity and growth. The State is continuing its already well-documented march toward becoming the first mainland state with no ethnic/racial majority population. Already, Black, Hispanic, and Asian/Pacific children combined comprise the majority of the State's school students from kindergarten through eighth grade. The State is on a threshold of a time (currently projected to occur in the year 2003) when no ethnic subgroup will constitute more than 50 percent of the population -- quite literally a time when there will no longer be any "minority" or "majority" groups.

Display 3 on page 12 indicates the extent of projected change in the ethnic composition of the population for the 50 years between 1970 and 2020. As indicated by the population projections, long-range planning in California today involves much more than simply anticipating additional numbers of students; it involves planning for a dramatically more diverse and, in many ways, entirely new student clientele.

In terms of total population over the next 20 years, California will continue to grow at a remarkable pace -- more than twice the national rate, to be specific. No other state in the nation will have these challenges and opportunities. Between now and 2005, California's population will grow by almost 25 percent -- representing almost 7 million additional people. This means almost 1,000 additional people per day for the foreseeable future.

This growth will continue beyond 2005; in fact, it appears that in the 40 years between 1980 and

DISPLAY 3 *Ethnic Population Change in California, 1970-2020*



Source: Demographic Research Unit, State Department of Finance.

2020, California will grow by roughly as many people as it did during the years 1940 and 1980. Display 4 outlines the Unit's statewide population estimates, by ethnicity, through the year 2005.

While planners may have minor disagreements over the amount and type of enrollment growth implied by these changes in California's population, there is no disagreement over the bottom line: In the twenty-first century, more rather than fewer Californians will require advanced educational opportunities. From the population numbers alone, that is a near demographic certainty.

DISPLAY 4 *Projected Total State Population by Race/Ethnic Group, 1985-2020*

Year	Asian/Other	Black	Hispanic	White	Total*
1985	2,228,100	1,984,100	5,844,900	16,308,000	26,365,100
1990	2,799,200	2,157,000	7,099,100	16,715,900	28,771,200
1995	3,324,400	2,301,300	8,368,000	16,962,000	30,955,700
2000	3,805,300	2,424,300	9,664,800	16,958,100	32,852,600
2005	4,255,000	2,545,900	10,985,700	16,759,800	34,546,300
2010	4,713,600	2,683,100	12,343,500	16,537,300	36,277,400
2015	5,176,200	2,824,300	13,672,800	16,331,000	38,004,300
2020	5,615,200	2,962,500	14,948,300	16,092,500	39,618,500

*Sum of race/ethnic groups do not add to Total due to independent rounding.

Source: Demographic Research Unit, State Department of Finance.

4 *Long-Range Enrollment Projections*

Background

Enrollment projections in California postsecondary education represent the essential foundations for annual operating and capital outlay budgets, facilities planning, academic planning, personnel recruitment, admissions policies, and nearly every other facet of the management and administration of higher education.

- Projected enrollments, in terms of average daily attendance, weekly student contact hours, full-time equivalents, and headcount are the basic building blocks in the budget formulas that drive the preparation of the annual operating budgets at the segmental, district, and campus levels.
- In the context of long-range planning, enrollment projections represent the single most important factor in determining the need for new facilities, and in some cases, entirely new campuses. Very literally, the expenditure of hundreds of millions of dollars can swing on the accuracy of enrollment projections.

It is essential, therefore, that policymakers recognize the limitations inherent in projecting long-range enrollments, and at the same time do all they can to ensure that these estimates are calculated with extreme care and with professional judgment.

Three entities are currently involved in producing enrollment projections for California's public postsecondary education segments -- (1) the Demographic Research Unit of the State Department of Finance, (2) the University of California, and (3) the California State University. The Chancellor's Office of the California Community Colleges currently does not prepare enrollment projections for that segment and thus it relies exclusively on official estimates from the Demographic Research Unit for capital outlay planning.

The Demographic Research Unit prepares enrollment projections for the University of California and the California State University, but its projections are advisory to these two segments and serve as a check on the projections they prepare and utilize for their own planning purposes. (Appendix D presents a detailed description of the Unit's method for projecting their enrollments.)

Recent projections

Based on the projections currently being used by the segments for long-range planning purposes, indications are that enrollments for all of public education will grow through 2005 by approximately 31 percent, with the California Community Colleges and the University of California growing by 30 percent and 44 percent, respectively, and the State University by 54 percent.

Within these totals, the State University projects that its undergraduate population will grow at a substantially faster rate than its graduate enrollment (66 percent to 7 percent), while just the opposite is true for the University of California, which projects that its undergraduate enrollment will grow by 34 percent while its graduate enrollment will increase by 80 percent (Display 5).

It should be noted that the State University's long-range enrollment projections are preliminary estimates generated in the very early stages of its own long-range planning process. The substantial increases in these projections, as compared to previous Demographic Research Unit and State University estimates, can be attributed to the fact that they incorporate optimistic assumptions on progress in providing access to historically underrepresented students. Specifically, the State University's projections assume that by 2005 the participation rates for Black and Hispanic students will equal those of their white counterparts. These projections were prepared by the Office of the Chancellor and precede a request to the campuses to outline the extent to which they can individually accommodate growth through the year 2005. As a result of the preliminary and ongoing nature of the State University's planning process, it is likely that

DISPLAY 5 *Projected Enrollment Growth in California Public Education, 1988-2005*

	1988	2005	Percentage Growth
California Community Colleges Total	1,321,007	1,714,000	30%
California State University Undergraduates	280,800	465,500	66%
California State University Graduate and Postbaccalaureate	70,900	75,800	7%
California State University Total	351,700	541,300	54%
University of California Undergraduates	117,809	158,425	34%
University of California Graduate and Professional	25,851	46,431	80%
University of California Total*	142,070	204,856	44%
K-12 Total	4,509,504	5,979,000	33%
Total Growth in Public Postsecondary Education	1,814,777	2,460,156	36%
Total Growth in Public Education	6,324,281	8,439,156	33%

*Excludes University of California Health Science Enrollments.

Source: Projections for the California Community Colleges and K-12 from the Demographic Research Unit, State Department of Finance. University of California projections from the University, and California State University projections from CSU.

these enrollment projections will undergo revision over time, as a result of refinements in the projection model and discussions with the campuses. So long as policymakers have a clear understanding of where demographic influences stop and where policy objectives begin, this projection approach is entirely consistent with the notion that the segments' planning figures should reflect more than just trend data, but should also incorporate the effects of achieving institutional goals to which the State and the segments are committed. A more detailed description of the methodology employed in these projections can be found in Appendix E.

It should also be noted that the University's graduate enrollment estimates are not, and never have been, driven by demographic trends. Rather, they flow from a variety of policy considerations, such as the need to replenish the faculty ranks and the need to maintain an appropriate graduate-undergraduate student balance on campuses.

With respect to growth in the public school system, the numbers are just as dramatic. Between 1988 and 2005, that system will likely add more than 1.4 million new students, representing growth of 33 percent. Compared to projected State population growth of 24 percent, it is clear that quality improvement will not be the only issue on the reform agenda for the schools, but that accommodation of substantially higher enrollments will also be a major factor driving their resource needs.

Demographic base

All three producers of enrollment projections utilize either directly or indirectly the baseline population projections prepared by the Demographic Research Unit discussed in Part Three. The Unit itself relies on the most recent population projections for California, stratified by age, sex, and county; the University of California utilizes the Unit's projections of K-12 enrollments (which flow directly from the population projections); and the California State University (for its long-range projections) employs the Unit's projections of statewide population, stratified by age, sex, and county of origin.

The Unit updates its K-12 projections annually, based on the results of the Department of Education's annual census of schools. (Appendix F presents a detailed discussion of the K-12 enrollment projection methodology.)

Enrollment projection methodologies

Display 6 offers a summary comparison of the enrollment projection methodologies of the segments and the Unit. As can be seen, the Demographic Research Unit and the California State University both produce their university-level enrollment projections by applying observed and/or projected participation rates of specific categories of students (age, sex, and county of origin), to projected population estimates in those categories developed by the Unit.

The University of California applies anticipated participation rates of California high school students to estimates of future high school enrollment to project entering freshmen. It then applies anticipated continuation rates to the previous year's en-

DISPLAY 6 Enrollment Projection Methodologies of the Segments and the Department of Finance

Enrollment Forecasters	Demographic Base	End-Year	Campus Specific	Methodology	Additional Variables
University of California	DRU K-12 Enrollment Projections (From SDE K-12 Census)	2005	Yes	Applies observed and projected enrollment rates to DRU estimates of high school students and their expected continuation rates to last year's enrollment.	Yes (ethnic change, latent demand, and others)
The California State University	DRU Population Estimates (By age, sex, and county of origin)	2005	No	Applies observed and projected enrollment rates for specific categories of students to projected population in those categories, as estimated by DRU.	Yes (ethnic change)
Demographic Research Unit, California State Department olf Finance	DRU Population Estimates (By age, sex, and county of origin)	UC: 1996 2010* CSU: 1996 2010* CCC: 1996	UC: No CSU: No CCC: By District	Applies observed enrollment rates for specific categories of students to projected population in those categories, as estimated by DRU.	No**

*Extended forecasts.

**These forecasters are currently in the process of reviewing and revising their methodologies to accommodate consideration of additional variables.

Source: California Postsecondary Education Commission.

rollment estimates to generate its base demographic projection.

In addition, the University's model allows, among other factors, the addition of explicit assumptions concerning ethnic change and latent demand to the base demographic projection. Since the capacity to incorporate different assumptions allows numerous variations on the same basic model, the University has usually presented its enrollment projections as a range of potential enrollment levels.

Community college enrollment estimates for capital outlay purposes are projected by the Unit through use of an age/sex participation rate model that utilizes historical and projected county populations by age and sex, and community college enrollment data by age, sex, and enrollment category. The population base for each community college district is the county or counties in which it is geographically located, minus any population present in military barracks or State institutions and full-time students in local four-year colleges. (Appendix G contains a more specific description of this methodology.)

The Unit also prepares statewide adult population estimates that are used to calculate annual budget allocations for the community colleges, but neither the Unit nor the community colleges prepare enrollment estimates that can be used for short-term "next year" enrollment planning.

5 *Segmental Enrollment Planning*

California Community Colleges

There is general agreement that the current enrollment planning and annual budgeting mechanism for the California Community Colleges is inadequate and in need of substantial change. In fact, recently enacted reform legislation (Assembly Bill 1725, Vasconcellos) and the voter-approved Proposition 98, have set the stage for the community colleges to undergo dramatic reform in the way their annual needs are calculated for budgeting purposes. While it is too early to comment on the pace and form in which these reforms will proceed, it is likely that the next five years will see a major transition by the community colleges away from the enrollment planning and budgeting process described here.

The community colleges' annual budget appropriations, like those of the University and State University, are largely enrollment driven. However, the manner in which the colleges' enrollments are projected and defined is dramatically different than that found in either of the universities. To begin, annual enrollments in the community colleges are measured and budgeted in average daily attendance (ADA) -- the same enrollment measuring unit used in the public school system. Average daily attendance in the community colleges is measured by a statutory formula in which 478 hours of actual class attendance or "seat time" equals one ADA. This 478-hour figure is derived by taking 525 hours -- a figure equal to one student taking a full class load for one year -- and multiplying by an "absence factor" of .911, or the percentage of students who are generally absent each day.

For budgeting purposes only, the Demographic Research Unit annually conducts a statutorily defined estimate of percentage movement in the statewide adult population. (Appendix H offers a more detailed discussion on how the Unit estimates these population changes.) The annual estimated percentage change in adult population is then applied strictly as a budgeting formula to calculate the annual change in the community colleges' fundable enrollments for the entire system. For example, and discounting adjustments for inflation, if the Unit projects a 2 percent increase in statewide adult population for the next year, that translates for budgeting purposes into a projected 2 percent increase in fundable average daily attendance for the entire community college system.

This process is described in greater detail in Part Six below on the State budget, but it should be noted here that this approach to projecting budgetary needs does not allow "enrollment planning" in the normal sense of the term. Its most obvious shortcoming is that a shift in district adult population may or may not correspond to shifts in the size of the primary college-going age cohorts. In fact, in cases where growth in the primary college-going cohorts have outstripped growth in adult population as a whole, it is likely that ADA-based budgeting has had the effect of underfunding enrollment demand to such a degree that the enrollment in some districts, at least in high-cost programs, has been capped contrary to the intent of the Master Plan. As a result, this approach to annual budgeting in the community colleges has come under increasing criticism in recent years, resulting in the reform efforts mentioned above.

The California State University

The enrollment projections currently utilized for enrollment planning in the California State University are distinct and separate from the long-range projections discussed in Part 4, although we expect that as the State University moves further along in its long-range planning efforts, the campus enrollment allocations (and the projections driving them) will more fully integrate the information and assumptions developed from the newer projections.

Initial five-year campus enrollment allocations for academic planning, capital outlay planning, and the annual support budget of the California State University are developed based on systemwide enrollment projections generated by recent campus experience and the State University's enrollment projection model, known as the California Higher Education Enrollment Projection model or CHEEP. (Appendix I contains a methodological description of this model.)

These proposed allocations are reviewed in the Office of the Chancellor by the Enrollment Planning Council before being sent to the campuses. This council is chaired by the vice chancellor for academic affairs and includes the vice chancellors for business affairs, faculty and staff relations, and university affairs plus representatives from academic affairs, resources, analytic studies, budget planning and administration, and physical planning and development divisions of the office. This composition of the council aims to insure that the enrollment allocation process receives a thorough high-level review by all of the appropriate divisions.

The proposed allocations are distributed to the campuses in February. (Display 7 below provides a timeline for the entire enrollment projection/budget development process.) The campuses, using their own enrollment projection and planning techniques independent of the CHEEP model, may propose alternative enrollment allocations for the same five-year projection period.

Differences in the proposed allocations become the basis for discussions between the individual campuses and the Office of the Chancellor. The systemwide total enrollment projection is an overall constraint on this process. Although individual cam-

DISPLAY 7 *Timeline for the California State University's Annual Enrollment Planning Process, 1989-90 through 1993-94*

Dates	Activities
January 1988	Release of the Governor's Budget for 1988-89 (approximately January 10).
February 1988	The Chancellor releases proposed campus enrollment allocations for the five-year planning period 1989-90 through 1993-94. These allocations use the "proposed budgeted enrollments" contained in the 1988-89 Governor's Budget as a starting point.
March-April 1988	Campuses enter negotiations with the Office of the Chancellor on their five-year enrollment allocation. Final revisions are decided by April. The resultant final enrollment allocation for 1989-90 becomes the official enrollment projection used for 1989- 90 budget preparations.
June-July 1988	Final Budget for 1988-89 is approved.
September 1988	The Trustees adopt their Capital Outlay Budget for 1989-90 through 1993-94 based upon the final enrollment allocations.
October 1988	The Trustees adopt their 1989-90 Support Budget based upon the final enrollment allocations for 1989-90.
October-November 1988	Academic year 1988-89 begins. Fall 1988 student registration is completed. After closure of the Fall Enrollment Census, the system updates its estimates for the current 1988-89 academic year and the 1989-90 budget cycle. If necessary,these revised estimates for the current academic year become the basis for discussion with the Department of Finance on mid-year budget adjustments. The budget for 1989-90 may also be amended if the revised enrollment estimates for that year warrant.)
January 1989	Release of the Governor's Budget for 1989-90 (approximately January 10).

Source: Office of the Chancellor, The California State University.

pus enrollments may be negotiated up or down, the total of all negotiations does not deviate substantially from the projected system total. The particular situations and planning objectives of the individual campuses must be balanced with the need to allocate the systemwide enrollment projection among the 19 campuses. Campuses have substantial influence, but not complete control, in determining enrollment allocations for budget purposes. The final allocations are agreed on by both the campus and the Chancellor.

The end result of the negotiation process is the enrollment allocations that are adopted as State University policy. The enrollment allocation for the next budget year becomes the official projection for developing the support budget, and the five-year allocations become the official figures used for academic planning and developing the capital outlay budget.

Allocations for the five-year projection period are updated annually as one of the first steps in the budget development process. The updates reflect the most recent enrollment experience in the system. (Display 8 shows the most recent campus enrollment allocations available for the system.)

University of California

Enrollment planning at the University of California is an intensive effort between the Office of the President, which monitors Universitywide interests, and the campuses, which establish academic priorities. The distinguishing characteristic of University enrollment planning is its decentralized nature, coupled with extensive discussion between the campuses and the Office of the President, and frequent and regular updating and revisions resulting from a continuous process of review of actual enrollment experience and demographic expectations.

Two separate but related processes govern enrollment planning in the University:

- One sets enrollment goals for the long range, usually 15 or more years into the future, and is part of the process of long-range academic and facilities planning.
- The other provides "next-year" enrollment estimates within the context of the long-range plan and is used for annual budgeting.

Since the University's long-range plan provides the essential guideposts for annual planning, the following paragraphs describe the long-range process first.

Long-range enrollment planning

Principal responsibility for long-range enrollment planning rests with the campuses. Each campus is presently in the midst of studying the feasibility of accommodating long-range growth to the year 2005-06. The current effort is intended to update and extend the exploratory planning study presented to the Regents in October 1986, which projected growth to the year 2000-01. The principal focus of that study, as requested by the Legislature, was on graduate enrollment growth. The graduate enrollment study provided a detailed analysis of University graduate plans to that point, an in-depth look at University graduate enrollment planning, and a set of eight planning principles to guide future development of planned graduate enrollments. Because the University viewed as essential that graduate enrollments be planned in the context of undergraduate enrollment growth, the earlier study included an undergraduate enrollment study to the year 2000-01.

In carrying out the study, individual campuses pursued a wide variety of approaches and took into consideration a variety of factors, many of which were unique to their individual circumstances, including:

1. Local and regional demographic trends;
2. Local and regional economic conditions and forecasts; and
3. Individual campus assumptions on recruitment, retention, affirmative action progress, addition of new academic programs, and completion of planned capital projects.

Upon receipt of the campus' individual enrollment estimates, the Office of the President considered each proposal on its own merits and compared it with campus and systemwide enrollment forecasts generated through demographic projections prepared by the office. Upon further consultation with

DISPLAY 8 The California State University Allocated Annual Full-Time Equivalent Students 1988-89 to 1993-94[1]

Campus	Budget 1987-88	1988-89	1989-90	1990-91	1991-92	Target Years[2] 1992-93	1993-94
Bakersfield	3,250	3,425	3,500	3,600	3,500	3,500	3,500
Chico	13,300	13,500	13,600	13,700	13,700	13,700	13,600
Dominguez Hills	5,200	5,725	5,725	5,725	5,725	5,725	5,725
Fresno	14,400	14,800	15,000	15,100	15,100	15,100	15,000
Fullerton[3]	16,500	17,100	17,400	17,600	17,700	17,800	17,900
Hayward	8,750	8,850	9,050	9,150	9,150	9,050	9,050
Humboldt	5,500	5,535	5,540	5,540	5,540	5,440	5,340
Long Beach	23,200	23,600	23,600	23,600	23,600	23,600	23,600
Los Angeles	13,300	13,500	13,500	13,600	13,600	13,500	13,500
Northridge	20,600	20,850	21,000	21,100	21,200	21,300	21,400
Pomona	13,900	14,200	14,600	15,000	15,200	15,300	15,300
Sacramento	17,950	18,250	18,550	18,950	19,300	19,550	19,550
San Bernardino	5,900	6,400	6,550	6,900	7,200	7,400	7,500
San Diego[4]	25,800	26,100	26,300	26,300	26,600	27,000	27,100
San Francisco	18,400	18,700	18,800	18,900	18,800	18,750	18,700
San Jose	19,100	19,600	19,600	19,600	19,600	19,400	19,300
San Luis Obispo	14,300	14,300	14,300	14,700	15,100	15,100	15,100
Sonoma	4,450	4,500	4,500	4,500	4,500	4,450	4,400
Stanislaus	3,550	3,700	3,750	3,800	3,850	3,900	3,900
System Totals	247,350	252,635	254,865	257,365	258,965	259,565	259,465

1. Based upon the projections of enrollment prepared by the State Department of Finance, Demographic Research Unit.
2. The target year 1992-93 is for projects previously funded for working drawings and the target year for new starts is 1993-94.
3. Includes full-time-equivalent enrollment for South County Off-Campus Center.
4. Includes full-time-equivalent enrollment for Imperial Valley Campus, Calexico, and North County Off-Campus Center.

Source: The California State University Capital Outlay Program 1988-89.

the campuses, resulting in some cases in changes to campus estimates, the office finalized a long-range enrollment plan and forwarded it to the campuses and the Academic Senate for review and comment. These campus plans are currently undergoing substantial review and revision, as will be discussed below.

The University's current study of long-range planning to the year 2005-06 began when the Office of the President requested from the campuses detailed undergraduate, graduate, and health sciences academic enrollment proposals for the period 1988-89 to 2005-06. The campuses submitted their proposals to the Office of the President in March, 1988. Campuses prepared their proposals to the year 2005-06 in light of their desired academic configuration and the ultimate size to which they hoped to grow. Campuses also submitted proposed postbaccalaureate teaching credential enrollments and proposed graduate enrollments by the 11 disciplinary categories used in the previous graduate enrollment study. Criteria for reviewing graduate enrollment proposals included need for research, future demands for highly trained people (especially

future faculty), various enrollment and programmatic balance issues, affirmative action, selectivity and program quality, and financial support.

In the feasibility stages of the current long-range planning effort, the University has assumed that resources will be sufficient to construct the necessary buildings and hire the necessary faculty and staff to accommodate growth.

Undergraduate enrollment estimates: A major resource for projection of long-range undergraduate enrollment demand is the University's long-range demographic potential model. This model uses a standard cohort progression or survival methodology, which introduces new students at several levels (e.g., freshman, sophomore, etc.), the number varying according to a range of assumptions, and moves them forward according to currently observed rates. The projections of K-12 enrollments developed by the State Department of Finance's Demographic Research Unit provide the demographic base for projecting new University students. Specifically, the model uses projected numbers of public and private school tenth graders because these afford a demographic base that is less susceptible than numbers of high school graduates to fluctuations in the dropout rate. The model's basic rates are derived from observed numbers of new University enrollments and of corresponding tenth grade students an appropriate number of years earlier. The University extends the Demographic Research Unit's tenth-grade enrollment projections forward an additional seven years using the Unit's lower grade projections and grade progression ratios. Although projections become less reliable the further into the future they go, the University feels that the extension is justified because it is based on births that have already occurred in California and, as a result, it affords a look at the general direction of change.

The University uses the Unit's K-12 projections for its model rather than its projections of the population by age for two reasons. First, there is a closer correlation between the base and the projected enrollment potential because most new University students are recent California high school graduates. Second, school data are reported annually to the State Department of Education, whereas projections of the population by age are based on the last national census and are updated only every several years. (It should be noted that the advantages of using K-12 projections are unique to the University, owing to the homogeneous nature of the age cohort of its entering freshmen. It is unlikely that K-12 projections could serve as an appropriate demographic base for either the State University or the community colleges.)

Recent participation and continuation rates applied to the demographic base generate results that are essentially projections of the University's demographic pool. The model, however, also allows the insertion of various assumptions relating to future enrollment behavior. For example, the model contains projections of future proportions of tenth graders in the major ethnic groups in the State -- non-Hispanic White, Asian, Black, and Hispanic -- developed from ethnic censuses of the public schools by grade, which are taken every several years. These may be used in conjunction with varying assumptions concerning future participation rates for these groups to ascertain the various potential effects of ethnic change in the K-12 population on future University enrollments. (The University's most recent long-range undergraduate enrollment estimates are depicted in Display 9 on page 22.)

Other variations in the University's projections include assumptions of latent demand for one or more campuses and the level of future participation rates. Application of various assumptions that represent probable or possible changes in the future makes the University's model useful for reviewing campus proposals.

Part of the result of the University's feasibility analysis was the long-range projections of demand for undergraduate enrollment to the year 2005-06 presented to the Regents at their October 1988 meeting. The process used to arrive at the projected graduate enrollments is described below.

Graduate enrollment planning: While the decision-making processes are similar, feasibility analysis for graduate enrollments at the University displays several significant differences from undergraduate enrollment projection. For example, the University has made a historical commitment to accept all eligible undergraduate applicants and has been funded by the State to do so, whereas graduate enrollments are closely managed and funding for increases is negotiated with the State.

DISPLAY 9 University of California Model-Based Undergraduate Enrollment Projections. 1988-89 Through 2005-06

Year	Undergraduates
1988-89	116,219
1989-90	120,621
1990-91	121,737
1991-92	121,674
1992-93	121,876
1993-94	121,921
1994-95	122,380
1995-96	123,796
1996-97	125,224
1997-98	126,994
1998-99	129,964
1999-00	132,915
2000-01	137,350
2001-02	141,580
2002-03	145,622
2003-04	150,036
2004-05	154,282
2005-06	158,425

Source: Office of the President, University of California.

These differences contribute to differences in the feasibility analysis process.

Graduate enrollment planning follows a set of eight principles, articulated in the 1987 *Graduate Enrollment Plan for 1985-86 Through 2000-01* (pp.23-46):

1. *Need for research:* Research is the means by which the University of California creates new knowledge and, in the long run, is a contributor to the economic, social, and cultural well-being of the State. Graduate enrollment increases permit expansion of this vital function both by providing apprentice researchers in the present to support ongoing University research and by training future researchers to serve society.

2. *Future needs for advanced training:* A major element in planning future graduate enrollments is an assessment of likely changes in the job markets for individuals with advanced degrees. Long-range predictions about openings and areas of growth for individuals with advanced academic and professional degrees are built on a complex array of elements: among them past and current trends, patterns of turnover and expansion, and the economic future predicted for the State. Complicating these predictions are variations in the depth of available data about the diverse job markets for advanced degree holders and the substantial time required to complete many advanced degrees, doctorates in particular.

3. *Placement:* Placement represents the responsiveness of University graduate programs to the job market for holders of advanced degrees.

4. *Balance:* Balance is an art of institutional development. The number of graduate students in doctoral and doctoral-track master's programs must be large enough to form a critical mass for effectiveness and to attract and retain an excellent faculty. The mix of graduate and undergraduate students should be such that effective education is possible at both levels. Within graduate education, there should be an appropriate mix of academic core (letters and science) and professional programs.

5. *Foreign student balance:* Balance between foreign and domestic students weighs the obligations of a major American university to extend its programs to the world as well as the nation and, in some cases, to attract the most gifted of the world's students to stay; against the obligation to assure a sufficient supply of domestic students with advanced degrees to meet America's needs.

6. *Affirmative action:* The University of California has a continuing obligation to prepare individuals with advanced degrees in a pattern that reflects the diversity of the State's population.

7. *Selectivity and program quality:* Maintaining and raising the University of California's already high admissions standards, and maintaining and increasing program quality are essential to assuring the continuing strength and preeminence of its programs.

8. *Financial support:* The ability to attract the strongest graduate students rests in part on the ability to offer them suitable support while they complete their graduate programs.

As is the case with undergraduate enrollments, the Office of the President and individual campuses engage in extensive consultation in planning for and assessing the feasibility of graduate enrollment levels according to these criteria.

The University's most recent graduate enrollment feasibility study to 2005-06 shows substantial proportional and numerical increases over the 1986 enrollment study (Display 10 shows the most recent estimates). There is no direct link between the factors implying a need for growth in graduate student enrollments and the final enrollment estimates that have been developed by the University. This is due to the subjectivity inherent in long-range economic forecasting, as well as difficulties in estimating the number of graduate students necessary to replenish a retiring faculty. Since the University will supply only a portion of the advanced degree holders needed by the private sector and for future academic positions, the precise need for growth in graduate education will be determined, in large part, by the actions of other advanced-degree-granting institutions over which the University has limited knowledge and no control.

This process is fundamentally different than undergraduate enrollment planning, where the supply and demand factors operate on the State rather than the national and even international levels. Further, undergraduate enrollments can be projected with a higher level of confidence since the key factors being considered are trends driven by demographic shifts rather than economic forecasts, which are much less predictable. Hence, the University maintains that while it can discern from myriad indices that growth in graduate student enrollments is necessary, it is not possible to reach an exact enrollment estimate which flows directly from the factors implying the need for growth.

The limitations in precisely estimating the State's future needs for graduate education are illustrated by two influences among the eight listed above that were particularly important in setting the new feasibility study figures: (1) the future market for holders of advanced degrees and (2) institutional balance. A third influence leading to increased numbers was the University's new academic planning activity concerning expansion of professional education.

DISPLAY 10 University of California Graduate Enrollment Estimates, 1988-89 Through 2005-06

Year	Graduate Students
1988-89	25,851
1989-90	27,348
1990-91	28,120
1991-92	28,710
1992-93	29,312
1993-94	29,881
1994-95	30,559
1995-96	31,488
1996-97	32,439
1997-98	33,295
1998-99	34,692
1999-00	36,514
2000-01	38,213
2001-02	39,860
2002-03	41,460
2003-04	43,154
2004-05	44,626
2005-06	46,431

Note: Excludes Health Science enrollments.

Source: Office of the President, University of California.

1. *Future market for holders of advanced degrees:* When the 1986 graduate enrollment study was being developed, key studies of faculty turnover and related changes in openings for academic jobs across all disciplines and in certain large professions pointed to the need to increase the numbers of graduate students at the University. It projected some 6,000 faculty vacancies in the 15 years between 1985 and 2000, while the State University anticipated recruiting 8,100 new faculty during the same period. By 1988, these figures had increased dramatically in view of the fact that actual enrollments were substantially above those projected in 1986 and future enrollments were likely to be correspondingly higher.

Looking to 2005-06, University officials now project the need for 9,400 faculty replacements, to which may be added as many as 770 new faculty for new campuses built to accommodate growth. In addition, in Spring 1988, State University officials reported to the Trustees a need for between 8,500 and 11,000 faculty hires on existing campuses over the upcoming 15 years and expressed serious concerns about the State University's ability under current circumstances to fill all those vacancies. Added to these needs, the California Community Colleges are now under legislative mandate to upgrade their faculty. The University is cooperating with the Chancellor's Office of the community colleges in a special study to determine the University's role in helping to meet their faculty needs over the next several years.

Nationwide, there are other indicators of the increasing need for individuals with advanced degrees. While California appears to be far ahead of other states in projecting long-term faculty turnover, professional association information has pointed to continuing trends in several key academic fields. Both the American Historical Association and the Modern Language Association continue to post annual increases in numbers of job openings. In 1988 alone, numbers of jobs advertised through the American Historical Association increased by 32 percent. The Modern Language Association reported that its published job listings doubled in foreign languages between 1983 and 1988 and doubled in English between 1984 and 1988.

Shortages of engineering and science Ph.D.s in a variety of fields continue -- as illustrated by a Federation of American Societies for Experimental Biology report that demand for biologists in research is beginning to exceed supply, as numbers of positions increase and the new biotechnology companies compete for advanced degree holders.

2. *Institutional balance:* Balance is a second major planning principle contributing to an increase in the proportion of graduate students in the 1988 feasibility study. The 1986 study pointed to the serious erosion in the University's graduate student balance from 25.5 percent in 1970 to 19.2 percent in 1985. In order to focus on how the University stood in relation to its public comparison institutions, the Office of the President analyzed comparable letters and science disciplines. The University's average proportion of graduate students in these disciplines was 11.9 percent in 1985, while the public comparison group averaged 18.1 percent. The 1988 feasibility study seeks to bring the University's proportion of graduate students into line with this comparison-group average.

3. *Expansion of professional education:* An added consideration leading to an increased proportion of graduate students is the University's new major academic planning activity related to professional education. Between 1980 and 1986, no new professional schools opened at the University. Then in succession, new schools received approval in the fields of Pacific Rim studies, engineering, and architecture. To guide future development of professional education in the upcoming years, President Gardner called for a special planning effort by a new Advisory Committee on Professional Education, which held its first meeting in November 1988. Its work on identifying future needs for professional programs will have a significant effect on the need to increase numbers of graduate students.

The long-range enrollment estimates established through these undergraduate and graduate planning processes will form one of the bases for the next step in campus planning: creation of a long-range development plan for approval by the Regents.

Short-term undergraduate enrollment estimation

Short-term undergraduate enrollment estimation for annual budgeting is highly decentralized at the University. It is conducted between each campus and the Office of the President within a framework of broad consultation. Discussions center on compatibility of expected enrollment levels with the long-range campus plans. All parties understand that the fulfillment of long-range projections does not necessarily follow a smooth curve and that annual perturbations are to be expected. Intensive discussions take place between the Office of the President and the individual campuses to negotiate any differences that may arise during the review.

Enrollment estimates driven by broad demographic trends play a relatively minor role in setting annual enrollment levels. This is due both to the unreliability of demographic estimates in a one-year

time frame, as well as the superiority of other approaches which rely more, as any projection must, on individual professional judgment made in the context of recent experience.

The annual undergraduate enrollment estimation process consists of three iterations:

First update: The process begins with the Office of the President's request for updates, due in late June, of current enrollment information and for proposals for campus enrollments. These are to be used in developing the submission to the Regents for the upcoming budget cycle. The campus proposals are reviewed in light of compatibility with the campuses' long-range projections and their feasibility. The Office of the President monitors these enrollment estimates and, where necessary, negotiates with the campuses to accommodate some more students at the margin in an attempt to assure that the University will meet its commitment to accept all eligible California applicants.

In negotiating these annual campus enrollment levels, several factors have previously formed the basis for discussions between campuses and the Office of the President:

1. *Academic planning issues:* Individual campuses plan for growth in a manner consistent with their long-range academic planning objectives. The effort to implement academic planning priorities can include hiring new faculty, admitting more students, and expanding facilities in those disciplines where an institution is encouraging growth and seeking or sustaining academic prominence. Campuses generally encourage expansion in fields consistent with their long-range academic goals. Matching a campus's long-range academic planning goals with short-term student enrollment demand can be especially difficult during periods of rapid, unexpected growth.

2. *Accommodation of eligible applicants:* The University has historically maintained a commitment to offer a place to all eligible California high school graduates who apply for admission, although not necessarily at the campus or in the program of first choice. The University strives to meet this commitment within the limits of each campus's feasibility to grow and is now engaged in a planning process for identifying what those limits are, when they will be reached, and the consequent need for additional capacity. In an era of rapid or unexpected growth, as the University now finds itself, providing space for eligible applicants has previously tended to override other planning considerations.

3. *Physical capacity:* An important consideration in annual enrollment planning is the physical ability of a campus to accommodate growth. This includes adequate classroom, laboratory, lecture space, and libraries; as well as space for the additional support services, administration, and faculty required to serve the increased number of students. Physical capacity constraints necessitate separate admission targets for selected programs because of differing resource requirements for instruction. This is the case in engineering, which has both high demand and high resource requirements in terms of laboratory space and special equipment. As evidenced by current overcrowding on some campuses, adequate physical capacity has sometimes been overshadowed by the University's commitment to admit all eligible applicants.

4. *Faculty and other personnel resource issues:* Enrollment growth requires more faculty, more academic support personnel, more student services personnel, and often more administrative capacity. An important constraint on annual enrollment planning is the availability of faculty and other personnel, such as student services staff. It takes time to recruit, hire, and bring new persons to the institution. With regard to new faculty, this problem is especially difficult given the extensive and meticulous nature of the hiring process. The future promises to make this constraint even more pronounced if labor shortages of qualified new faculty materialize, as expected, over the next 20 years, due to significant anticipated increases in the number of faculty retirements.

5. *Recent problems leading to overcrowding:* The overcrowding that has occurred on a number of University campuses has resulted, at least in part, from two major causes. The first is the steady and unexpectedly large increase in participation rates that began in the late 1970s. University planners had factored some increases in participation rates into their enrollment projections because they believed latent demand existed and would be manifested when planned outreach and program improvements were initiated. They felt that these improvements would result in enrollment stability as the number of high school graduates declined in the

1980s. However, between 1977 and 1987, the enrollment rate of California high school graduates at the University rose almost 50 percent, and retention also improved. The result was sharp increases in enrollment, even as the number of high school graduates declined.

A second contributor to overcrowding was the reduction in capital funding in the University's budget during the strained State budget years of the 1970s and early 1980s. From 1970-71 to 1982-83, general campus capital outlay averaged just $18 million a year for all eight general campuses; in 1983-84 the University's total capital budget was $7 million. In addition, between 1978-79 and 1983-84, $200 million was cut from the University's operating budget. New building, improvements to existing buildings, and even routine maintenance came to a near standstill just as enrollment demand began to increase. The University budget improved dramatically starting in 1984-85, however, the improvements have not yet been able to catch up with the large backlog of deferred maintenance and obsolete equipment built up over the previous decade, although the process of catching up is well begun.

6. *Balancing campus growth with community planning goals:* An important consideration in setting annual enrollment estimates is the local community's attitude toward growth. In the past several years, the tension between campus plans for growth and community desires to limit growth have become more pronounced.

The proposed undergraduate enrollments included in the Regents' Budget are the result of these discussions and negotiations.

Second update: The Office of the President requests a second update in the fall, due in early November, so that the University's submission to the State for use in the Governor's Budget may take advantage of the additional information provided by the fall enrollment experience. The Office of the President reviews the updates and negotiates with the campuses, if necessary, by the same process that governs the updates submitted in late June for preparation of the Regents' Budget.

Third update: The Office of the President requests a third and final budget cycle update for mid to late February. The open application period for fall enrollment takes place the prior November, but applications continue to be accepted after November 30 if campus targets are not met -- a circumstance that has become less and less frequent in recent years. (Should the applications received before February indicate a substantial divergence from the expectations underlying the fall submission, the University may request an update of the enrollment estimates included in the Governor's Budget.

6 *Capital Outlay Planning*

California Community Colleges

The capital outlay planning process for the California Community Colleges occurs within a fairly rigid framework of separation of responsibility and authority between the various community college districts and the Chancellor's Office. The districts enjoy almost complete autonomy in developing local capital outlay priorities, but once the districts submit their capital outlay requests, the Chancellor's Office exercises central authority for developing and stewarding a single statewide community college capital outlay budget through the legislative process.

Identification of capital improvement needs

The needs identification process for capital improvements in the community colleges occurs at the campus and district levels, utilizing a wide variety of processes. As is the case with the two universities, the persons responsible for capital planning at the district level consult, to one degree or another, with deans, department chairs, faculty and others to identify perceived capital outlay needs.

While the identification of needed capital improvements is carried on throughout the campuses in a district, the manner in which these districts identify these needs varies widely -- from highly consultive to highly autocratic.

Preparation of program planning guides

Upon completion of the consultations with the campuses in a district, local facility planners translate identified capital improvement needs into a formal district-wide capital outlay program. Individual districts then begin preparing Program Planning Guides on those projects for which funding will be requested in the upcoming budget cycle. The districts find themselves at a substantial disadvantage to the University in this regard, in that like the State University, their staffing limitations do not allow them to rely on their own architects and engineering personnel to assist in developing these Program Planning Guides. Further, at both the statewide and district levels, the community colleges appear generally to have fewer staff working in facilities planning than either of the university segments. In some cases, one or two persons may assume all planning responsibilities for a multicampus district and may even have other responsibilities beyond facilities planning. As a result, local planners are almost solely responsible for developing all Program Planning Guides for a district's entire capital outlay program.

By February 1 of the year prior to which funding is being requested, the districts inform the Chancellor's Office of their capital outlay plans by submitting a Program Planning Guide for each capital project being proposed as well as a draft revision of their Five-Year Capital Outlay Plan, incorporating all projects requested through the Program Planning Guides as well as longer range projects that they expect to submit for funding in future years.

Chancellor's review of the proposals

Upon receipt of the districts' Program Planning Guides, the Chancellor's Office reviews the proposals and prioritizes them by pre-determined criteria, based on the type of capital project (new construction, remodeling, providing access for handicapped persons, and the like) and their space classification such as classrooms, lecture halls, instructional laboratory space, or faculty offices.

The requests falling within similar project type and space classifications are ranked in comparison to other colleges' need for the same type of project. This intercampus need comparison is accomplished by evaluating current utilization patterns for all capacity space on a campus. The utilization rates are expressed as a percentage. The Chancellor's Office then analyzes a campus' five-year capital outlay plan in light of the expected completion of similar projects that may already be receiving funding.

It juxtaposes existing capacity plus anticipated new or renovated space against the Department of Finance's five-year enrollment projections for the campus, and it derives a projected five-year space utilization rate, taking all of the above factors into consideration. This space utilization rate is called the "capacity-to-load ratio" and is expressed as a percentage, with rates under 100 percent indicating a need for additional space, and rates over 100 percent indicating underutilization of existing or expected new space capacity. The Chancellor's Office uses the Demographic Research Unit's enrollment estimates, which were discussed previously, in calculating the capacity-to-load ratio. This ratio is the figure used to compare the relative need of different districts for similar projects.

By performing this analysis for all similar projects in the system, the Chancellor's Office is able to prioritize all proposed capital projects within a designated project type or space category. Upon completion of this process, and after consultation with the districts, the Chancellor's Office develops a comprehensive capital outlay plan for all of the districts. This program is then forwarded to the Board of Governors for review and adoption.

(Display 11 on the opposite page outlines the steps in the community colleges' capital outlay process. The current priority criteria list for community college capital outlay projects is as follows:

Category A: To activate existing space.

1. To meet safety requirements and to correct hazardous conditions; to provide access for handicapped persons under Federal Section 504 regulations, providing these are categorically noted funds (federal or state) for such compliance.

2. Equipment funds for previously funded projects.

3. Replacement or alterations of utility service under specific critical conditions for facility operations.

4. Alterations, renovation, or remodeling, concomitant to previously funded projects.

5. Alterations and remodeling (retrofit) for energy conservation under specific conditions.

Category B: To provide for new or remodeling of existing space for instruction and for academic and instructional support facilities.

6. Remodeling and new construction of classrooms, teaching laboratories, libraries, and learning resource centers. Projects in this classification are prioritized based on existing capacity and current and projected need (capacity-to-load ratio). Projects with the same capacity to need rating are ranked as follows:

(a) Remodeling project.

(b) New construction of classroom or teaching laboratory.

(c) New construction of library or learning resource space.

7. Remodeling and new construction of academic and instructional support facilities (includes office space). Projects within this classification will be prioritized based on existing capacity and current and projected need. Projects with the same capacity-to-need-rating are ranked as follows:

(a) Remodeling project.

(b) New construction of faculty office space.

(c) New construction of administrative office space.

(d) New construction of other support facilities.

Category C: To provide noncapacity space.

8. Land acquisition funds to relieve demonstrated capacity deficiencies of an immediate nature. (This may be for an existing campus or an approved new campus, providing the district ratio of capacity to load is less than 100 percent in the target year.)

9. Construction funds for renewal work, including air conditioning, required to improve existing instructional and/or library facilities.

10. Working drawings and/or construction funds for physical education facilities (when physical education is a program or degree requirement).

11. Working drawings and/or construction funds for theaters (if a theater arts program is offered by the college) and food service facilities.

Display 11 Timeline for the California Community Colleges' Annual Capital Outlay Planning Process

February	*March-June*	*July-August*
Districts provide the Chancellor's Office with proposals on all new capital outlay requests (in the form of program planning guides), as well as revisions in their five-year capital outlay plans.	The Chancellor's Office requests additional information on project proposals, enters into negotiations with individual districts, and performs comparative needs analysis on all campus projects within similar space and/or project type categories.	The Chancellor's Office, based on the results of district negotiations and comparative needs analysis, makes final decisions on which projects to include in the Community Colleges' overall capital outlay request, and formulates the draft capital outlay plan for the Board of Governor's consideration in September.

September	*October-November*	*December*	*January*
Districts submit "fiscal health" reports to the Chancellor's Office, for use in setting each district's state/local funding ratio. The Board of Governors' considers and approves the Community Colleges ' capital outlay request for the coming budget year.	Scope meetings are held in selected districts for which major capital outlay projects are being proposed. Minor revisions may be made in some projects, based on the results of the scope meetings.	The Chancellor's Office incorporates any modifications of projects resulting from Scope meetings and prepares the final version of its request for the coming budget year for transmittal to the Governor.	The Governor's Budget is released, including his/her proposal for the Community Colleges' capital outlay projects. The formal legislative portion of the process begins.

Source: California Postsecondary Education Commission.

12. Working drawings and/or construction funds for site development projects which do not have a direct relationship to the construction of a new building. (Site development that is necessary in the construction of a new building will be included with the category and item number of the priority criteria for which the building qualifies.)

13. Working drawings and/or construction funds for maintenance shops, warehouses, and all other facilities not mentioned above.

The Board of Governors gives preference to projects that have already been approved and funded for working drawings over other projects in the same category. The Board may also make exceptions to these criteria when it determines that to do so will benefit the students affected.

The Board earmarks the first available $20 million of requested capital outlay funds (slightly more or less, depending on the actual costs of particular projects) for Category A projects and the highest ranked Category B projects. It earmarks at least 20 percent of the requested funds in excess of the first $20 million for Category C projects. These allocations may be adjusted somewhat from year to year, depending on the amount of capital outlay funds that are likely to be appropriated to the community colleges.

Cost estimate and funding mix decisions

Cost estimates for proposed projects are made by local architects, with the cooperation of the Chancellor's Office and the Department of Finance. These estimates are expressed in dollars per assignable square foot and are based on historical experience with similar projects. As with the two university segments, an inflation factor is applied to historical cost information through application of an ENR (*Engineering News Record*) index. (The *Engineering News Record* annually publishes inflation factors for various types of construction projects.) The Department of Finance designates an appropriate ENR index that is then applied to the cost estimates for a specific capital project. Using this information, a total estimated cost is derived and is incorporated into the Program Planning Guide.

In mid-September in the year prior to the funding request, each district in the system submits Form-311 to the Chancellor's Office, outlining its general fiscal health. The Chancellor's Office uses this information to establish the State/local funding mix that will be applied to capital outlay proposals in each district. The current target funding mix is 90 percent State and 10 percent local financing for all capital outlay projects. However, match ratios of 95 percent State and 5 percent local funding are not uncommon; and the State has previously provided 100 percent of the capital outlay financing for some districts.

The Chancellor's Office, like the executive offices of the two universities, holds "scope" meetings in the fall prior to development of the Governor's Budget for the year in which the capital projects are being requested. It schedules these meetings in selected districts for which major capital outlay projects are being proposed and does not necessarily hold them in each district or for all projects being proposed for a district. These campus meetings include staff from the Department of Finance, the Legislative Analyst's Office, and legislative budget committee consultants, as well as key campus administrators, faculty, and staff. The purpose of the meetings is to provide State staff with the opportunity to ask questions and talk with campus faculty and facility planners about specific project proposals.

Upon completion of the scope meetings, the Chancellor's Office may make minor revisions in the districts' capital outlay requests, in order to respond to suggestions or concerns raised through the meetings. Upon completion of any changes in the plan, it forwards the community colleges' final capital outlay request to the Governor for consideration in the upcoming budget cycle, with all requested projects ranked in priority order according to the criteria previously discussed. Once the request is finalized, the Chancellor's Office enters into discussions with the Department of Finance, and the formal legislative portion of the process begins.

The California State University

The development of the State University's capital outlay program is administered by the Division of Physical Planning and Development in the Office of the Chancellor. The division works with facilities planners on the individual campuses in developing capital outlay projects. The campuses have wide discretion to identify capital outlay needs. The analysis for assessing the relative need and priority of individual projects is either conducted by the Office of the Chancellor or by the campuses within a set of well-defined planning policies, procedures, and priorities.

Elements of the capital outlay program

The *California State University 1988-1989 Capital Outlay Program* describes these planning policies and procedures as follows (pp. 103-104):

> The primary objective of the Capital Outlay Program for the California State University is to budget funds to meet approved educational programs, to provide facilities of equal quality and quantity to serve the students at the nineteen campuses, and to create an environment conducive to learning.
>
> Broad participation by those responsible has been enlisted by the campuses and the Chancellor's Office in developing the Capital Outlay Program. The following is the basis of the Capital Outlay Program 1988-89 and Five-Year Capital Improvement Program 1988-89 through 1992-93, State Funded:
>
> 1. *Approved academic master plans:* In 1963, the Board of Trustees adopted dynamic

planning policies which were designed to regularize curricular development and guide program distribution in the rapidly expanding system, and facilitate the progress of each individual campus in meeting the primary function as expressed in the statewide master plan. These policies, published in the 1963 Master Plan for the California State Colleges, are still in effect. These have been summarized by Educational Programs and Resources as follows:

Curricula are to reflect the needs of students and of the State.

The foundation program for all campuses in the system consists of the liberal arts and sciences, business administration, and teaching. (The Board of Trustees defined specific subject areas which would be regarded as the "Broad Foundation Program.")

Programs in applied fields and professions other than those above are to be allocated within the system on the basis of (1) needs of the State; (2) needs of the campus service area; and (3) identification of employment opportunities.

"All campuses cannot be all things to all people." Curricula in the applied fields and professions are therefore to be located in a systemwide pattern which will achieve an equitable and educationally sound distribution of programs throughout the State.

While all campuses may wish to offer the same programs, the Trustees exercise great selectivity in the final approval of new criteria.

Specialized, high-cost programs are to be allocated on the basis of review and study of the individual subject area.

Subsequent policies adopted by the Board of Trustees include the following:

Degree programs are to be broadly based and of high academic quality.

Unnecessary proliferation of degrees and terminologies is to be avoided.

A formal review of existing curricula is to be conducted by each campus as part of the overall planning process.

The Academic Master Plans serve as the basis for campus master planning (facilities).

2. *Approved physical (campus) master plans:* Soon after the Board of Trustees of the California State University was established by the Legislature, it recognized the importance of each campus developing physical (campus) master plans in concert with the consulting architect and the community of each of the campuses. A physical master plan is required for each of the campuses. It is intended to serve as a guide for the physical development of the campus to accommodate a defined enrollment at an estimated target date in accordance with approved educational policies and objectives. The physical master plans encompass the ultimate physical requirements necessary to house the approved academic programs and auxiliary activities of each campus. The physical master plans consider functionally related disciplines and activities, instructional support needs, costs benefits, vehicular and pedestrian traffic flow, and aesthetics.

3. *Annual full-time equivalent student enrollment allocations:* The (capital outlay) program is based on the annual full-time equivalent student (FTES) enrollment allocations prepared by the Chancellor's Office, Division of Analytical Studies, in consultation with the campuses within the statewide projections prepared by the Department of Finance, Demographic Research Unit. Annual FTES enrollment allocations reflect the impact of year-round operations at Los Angeles, Hayward, San Luis Obispo, and Pomona as adopted by the Board of Trustees.

4. *Approved space and utilization standards:* The instructional space needs are calculated on the basis of space and utilization standards approved by the CCHE (now the California Postsecondary Education Commission) September 1966 as modified March 1971 and June 1973. The following table lists the currently approved utilization standards:

5. *Faculty allocations:* Faculty office space needs for the budget year are based upon their projected number of FTE faculty for each campus.

6. *Space and facility data base (SFDB):* All space needs to be funded in the Capital Outlay Program have been calculated by deducting the existing space inventoried and reported in the Space and Facility Data Base.

7. *Estimates of cost based upon the ENR (Engineering News Record) cost index:* The projected cost index is prepared by the Department of Finance in cooperation with the State agencies.

8. *Phasing out leased and temporary facilities:* The Board of Trustees in November 1972 resolved that all leased and temporary facilities should be phased out as soon as State funding could be secured for the replacement of the structures.

9. *Energy conservation:* Based upon ongoing audits, studies and application of the state-of-the-art control equipment, funds are requested to provide for energy conservation measures which will reduce campus energy requirements and realize cost avoidance in the utilities allotment.

10. *Alternate financing for cogeneration and other major energy efficiency improvement projects:* The Legislature introduced legislation to permit and to foster alternate financing, including tax exempt bond financing for funding energy projects or third-party financing. This was necessary because of the limited State revenues available for cogeneration and other major capital outlay energy projects. The Board of Trustees consents to these methods of financing which have been made necessary by limited State funds. The Trustees encourage the campuses to search out alternative means of financing cogeneration as a part of the CSU program to conserve energy. Alternate financing will be sought in the event that insufficient funding is available from the State Energy and Resources Fund for energy projects.

11. *Non-State funded projects are based upon financial feasibility and programmed within established planning guidelines:* The funds required to plan, construct, and operate new non-state funded facilities are other than State appropriations and ultimately come from mandatory fees, user charges and/or gifts. The State share in non-state funded projects has included providing a land base for facilities, providing in part the utilities to auxiliary facilities, and providing the initial cafeteria. The primary types of facilities provided from non-state sources are parking, student unions, health centers, stadiums, residence halls, food services, and bookstores.

The categories and criteria to be used in setting priorities are listed in the same document and below. (This priority list is reviewed annually by the Executive Council comprised of the Chancellor, Vice Chancellor, and the Presidents. It should be noted that the priorities necessarily include various forms of maintenance of existing facilities as well as construction of new facilities.)

1. *Funds for projects of systemwide benefit*

Priorities will be assigned in the following order:

1.1 Funds for Campus Master Planning and funds to ensure the implementation of a well-coordinated multi-year Capital Improvement Program. This includes architectural and engineering studies, feasibility analysis, benefit/cost studies, and various forms of alternative project studies.

1.2 Preliminary Planning for selected projects in the next year's Capital Outlay Program.

1.3 The Systemwide Minor Capital Outlay Program (Preliminary Planning, Working Drawings, Construction, and Equipment).

1.3.1 Projects to correct hazardous code deficiencies, to meet contractual obligations or to reduce CSU legal liabilities.

1.3.2 Projects to meet retroactive code requirements which are not part of a statewide program or to correct other health and safety deficiencies (includes handicapped accessibility).

1.3.3 Projects to maintain academic programs by ensuring continuation of current services or by reducing program deficiencies.

1.3.4 Projects to enhance academic programs which will result in incorporating new or additional courses in campus curricula.

1.3.5 Projects to accomplish general improvements, including utility/site development and improvements to non-instructional support facilities.

1.4 Feasibility studies for energy conservation projects (unless funding is available from sources outside the Capital Outlay Program).

2. *Funds to correct structural, health, and safety code deficiencies*

Priorities will be assigned in the following order:

2.1 Emergency projects to remove hazards to life and property and to correct code deficiencies.

2.2 Structural strengthening projects required to correct seismic hazards.

2.3 Projects required to correct health and safety code deficiencies.

2.4 Functional rehabilitation projects in which at least 50 percent of the construction cost, exclusive of any related building addition, is attributable to the correction of structural, health and/or safety code deficiencies.

3. *Funds to make new and remodeled facilities operable*

Priorities for purchase of equipment will be assigned in the same sequence as when the project was prioritized for construction funding.

4. *Funds for critical projects*

Critical projects will be identified from Categories 5, 6, or 7 by the Chancellor's staff in consultation with the Executive Council based upon the merits of each individual project. This may include requests for any combination of preliminary planning, working drawings, construction, and/or equipment projects. Priorities will be assigned in the following order:

4.1 Critical projects for which state funding has previously been acquired.

4.2 New critical projects which have not previously been funded.

5. *Funds for construction projects*

All construction projects [including requests for construction (C) and/or working drawings and construction (WC) funding] of the types included in Categories 6 and 7 will be placed within this category. The priority of construction project requests shall be determined first on the order of previous state funding, and then on the basis of space deficit as follows:

5.1 By campuswide space deficit for projects which will provide lecture classrooms, faculty offices, libraries, or instructional noncapacity facilities.

5.2 By space deficit within a campus' academic program(s) for projects which will serve only a related specific academic discipline.

6. *Funds to eliminate existing instructional deficiencies*

Preliminary planning (P), or preliminary planning and working drawings (PW) funds for instructional buildings, libraries, and student service facilities shall be included within this category. This also includes innovative instructional facilities to meet new modes and methods of instruction. Priorities will be determined based upon relative deficiency in campus space for libraries, instruction and office needs, auditoriums and large lecture halls, including consideration of inadequate and leased space. The latest actual enrollment allocations for the current year will be used in calculating the percentages of space deficiency. If two or more auditoriums or large lecture hall projects are within 10 percent of each other in their relative space deficiency as compared to enrollment, priority shall be given to the project for which 50 percent or more of its funding will be from non-state sources.

Generally, the following criteria will be used in setting priorities within this category:

6.1 A percent of deficiency in library and other noncapacity instructional space, lecture capacity, teaching laboratory capacity, and faculty offices.

6.2 Evaluation of the functional quality of facilities.

6.3 Lecture and teaching laboratory utilization.

7. *Funds to eliminate existing deficiencies of support facilities*

This category provides support facilities, including conversion and relocation projects on campuses where existing facilities are below the campus needs. Also, this category includes utilities, site development and land acquisition projects not intended to result in the provision of service to Off-Campus Centers. Priorities will be assigned in the following order based on percentage of space deficiency within the following subcategories:

7.1 Administration building projects.

7.2 Corporation yard projects.

7.3 Utility projects to correct existing deficiencies.

7.4 Access projects to correct existing deficiencies.

7.5 Land acquisitions.

7.6 General site development projects.

Process for developing the State University's capital outlay program

Campus facility planners begin the process of developing the State University's capital outlay program on individual campuses by consulting with deans, department chairs, faculty, and others to identify perceived capital outlay needs. This consultation is carried out program by program throughout the campus. The process typically begins in the Fall for the budget cycle two years hence. For example, internal campus consultations began during Fall 1988 in preparation for capital outlay requests in the 1990-91 budget cycle. Display 12 shows a schedule for the annual capital outlay process.

Once the consultation process has commenced with the various campus constituencies, campus facilities planners translate identified physical plant needs into a specific capital outlay plan. At this point a determination is made as to whether renovation, expansion, or construction of new facilities is necessary to meet the physical plant requirements. For each project, campus planners develop a Program Planning Guide containing the specifics of each proposal.

Costing of new construction projects is generally based upon total square footage of the project and estimated cost per assignable square foot. The cost values are contained in a "costing guide" developed by the Office of the Chancellor. The guide incorporates information, based on experience, on the costs of capital outlay projects by type of space (lecture, lower-division laboratory, etc.). The cost data are adjusted annually for inflation using the ENR index as published in the professional journal *Engineering News Record*. The Department of Finance, in consultation with other appropriate State agencies, designates the ENR index to be used for a given type of project. These cost factors are included in the "costing guide."

In January of each year, the campuses submit a preliminary draft five-year capital improvement program and draft Program Planning Guides for all capital projects proposed for the next budget cycle. The revised five-year plan incorporates the projects requested in the program planning guides plus new projects that will be proposed in later years. The revision of the five-year plans is the mechanism by which the campuses formally notify the Office of the Chancellor of their projected capital outlay needs. By April these proposals are reviewed and modified to become the capital improvements requested for the next budget cycle.

The Division of Physical Planning and Development in the Office of the Chancellor coordinates the review of the Program Planning Guides and may request clarification or expansion of the proposals. It then prioritizes all capital projects (new construction and renovation/maintenance) for the upcoming budget cycle. It accompanies this ranking by comparing projected enrollment against existing and planned capacity and evaluating them on other

DISPLAY 12 Timeline for the California State University's Annual Capital Outlay Planning Cycle, 1990-91 Through 1994-95

Dates	Activities
September-December 1988	Campus planners begin process of identifying capital outlay projects that will be requested in the 1990-91 Capital Outlay Budget.
January 1989	Release of Governor's Budget for 1989-90, including proposals for the State University's 1989-90 Capital Outlay Program.
January-February 1989	Campuses submit draft proposals to the Office of the Chancellor on capital projects to to be funded in 1990-91.
March-June 1989	Campuses provide Program Planning guides for new projects and updated versions of their five-year capital outlay plans. The Office of the Chancellor reviews these guides, negotiates with campuses, and preforms comparative analysis of needs. (Legislative hearings are completed on the 1989-90 budget).
July 1989	The Office of the Chancellor develops a draft capital outlay request for 1990-91 for review at the July Trustees meeting. (The final 1989-90 budget is released.)
August-September 1989	The Office of the Chancellor develops the 1990-91 Capital Outlay Program,which which is reviewed and approved by the Trustees in September.
October-November 1989	Scope meetings are held to provide on-site briefings for the Department of Finance and the Legislative Analyst on selected major capital projects.
November-December 1989	The Office of the Chancellor incorporates any modifications of projects resulting from the scope meetings and prepares the final version of the 1990-91 Capital Outlay Program for transmittal to the Governor.
January 1990	Release of 1990-91 Governor's Budget.

Source: Office of the Chancellor, The California State University.

critical considerations such as structural, health and safety code deficiencies.

After ranking the proposed projects within a category, the division ranks all projects according to the priority list given above. There is extensive consultation at this point with the campuses, including a review of the priority list itself, before the draft capital outlay program is presented to the Trustees for their review and approval in September.

Following approval of the program by the Trustees, the division holds "scope meetings" in the fall on campuses for which major capital outlay projects are being proposed. Scope meetings are not necessarily held on each campus nor for all projects being proposed at a given campus. They are primarily informational for the Legislative Analyst's Office (LAO) and the Department of Finance, and they represent an opportunity for them to look first hand at proposed sites and to talk directly to campus and central office personnel about specific aspects of a proposal.

Following completion of the scope meetings, the division may make minor revisions in the draft capital outlay program in order to respond to suggestions or concerns raised during the meetings. (Changes in a capital outlay request that do not change its total cost by more than 10 percent do not require approval by the Trustees). After these revisions, the Office of the Chancellor forwards the final capital outlay program to the Governor for consideration in the upcoming budget cycle which includes the Governor's Budget, released in January, and the legislative hearings held during the spring.

University of California

Capital planning at the University of California is a complex process that extends from the development of campus long-range development plans to the construction of specific projects. It is a highly decentralized process and aims to integrate the needs of individual campuses with the overall goals of the University and the external community, and it invests heavily in early, upfront planning, extensive analysis, and widespread consultation and negotiation.

Development of campus long-range development plans

At the University, capital planning and individual project approval occur in the context of each campus's long-range development plan. Approval of a long-range development plan by the University's Regents is a necessary condition for the siting of new construction projects. Each campus's development plan is based upon the academic goals of that campus and is a unique and comprehensive expression of the physical development necessary to accommodate those goals. It is used to guide day-to-day decisions about land use and environmental impact. It does not include a list of specific projects, but rather addresses issues such as optimal enrollments, landscape, functional relationships, circulation patterns, and open space.

Long-range development plans are prepared when campuses are new and are revised periodically as circumstances change. If, after approval of an plan, the desired siting of a specific project is not in accord with the plan, that project must be separately approved and the plan amended accordingly.

Under the law, the University -- like all the segments -- is required to prepare an environmental impact report for all projects, including long-range development plans, that are expected to have a significant impact on the environment. The process includes assessment and classification of potential environmental impact, internal consultation among faculty and administrators, and public review. Additional environmental review occurs whenever a long-range development plan is amended or revised. Both these plans and environmental impact reports are published documents that are available for campus, University, and public use.

Development of projects

The process for planning and seeking approval for individual projects begins at the campuses and stems from their academic programs, enrollment projections, and space plans. For projects to be funded by the State, the approval process includes the annual preparation by each campus of a capital improvement program and development by the Office of the President of the Regents' Budget for Capital Improvements. For projects to be funded by non-State sources, the approval process occurs on a project-by-project basis throughout a given year.

At the campuses, facilities planners work with faculty and administrators within individual academic units to identify facilities needs and to consider the options for meeting them. The possible outcomes may range from those that are not related to capital, to the reallocation or reassignment of space, to the renovation, expansion, or construction of facilities.

Once specific needs are identified, campuses undertake initial studies to define the details of their projects. These studies address a broad range of issues from the overall scope and cost of a project to the specific site conditions and design parameters.

As projects become more clearly defined, campuses initiate discussions with staff in the Office of the President in an effort to develop and refine proposed projects, to select those projects that should be pursued, to establish priorities among them, and to decide for which projects State funding should be sought. These efforts require campuses to consider competing needs, campus priorities, funding options, and development schedules. It means that they must undertake careful specification of their academic program needs through consultation with deans, department chairs, faculty, and senior administrators; consideration of their existing facilities and space plan; an examination of options for meeting those needs by means of renovation or expansion of existing facilities, or construction of entirely new facilities; and a number of preliminary studies that define the programmatic requirements for the project, and address technical issues related to site conditions, cost, and potential impact on the environment.

For projects to be funded by the State, each campus develops a capital improvement program proposal

for submission to the Office of the President. It includes a general description of each new proposed project and a list of the campus's priorities.

Once the campuses have finalized their capital improvement programs, the Office of the President works with them to set University-wide priorities among all of the project proposals and to determine the highest priority projects to be included in the Regents' Budget for that year. In setting priorities among the various project proposals, a number of factors are considered beyond the campus's own priorities. Among these are the relative needs of the campuses for space and the relative condition of existing facilities, issues of program quality that may result from technologically obsolete facilities or major health and safety deficiencies, special program initiatives, such as the Graduate School of International Relations and Pacific Studies at the San Diego campus, the cost-effectiveness and likelihood of funding of some project proposals compared to others, the degree of preparedness of proposals in terms of how clearly a project is defined and how well it is justified, and the overall goal of constructing a budget that presents a balanced program of construction, renovation, infrastructure development, and code correction.

Preparation of project planning guides

Campuses prepare a project planning guide for each of their proposed projects. The project planning guide provides relevant information about enrollments and the academic programs to be supported by the capital project, analysis of facility requirements for the program, a detailed description of the proposed physical improvements, and a detailed budget and funding plan.

In many cases, up to two years of detailed planning is undertaken before a project proposal is ready and the project planning guide is complete. This initial planning requires a great deal of time and effort, but aims to ensure the programmatic justification and cost-effectiveness of every project for which State funds are requested.

As should be clear from this discussion, the internal process employed by the University for identifying and prioritizing capital outlay projects is highly decentralized, with substantial discretion left in the hands of the individual campuses. This level of decentralization is possible, at least in part, because the University maintains substantially larger planning staffs on the campus level than either the State University or the community colleges.

This intensive front-end planning also forms the basis for the annual Regents' Budget for Capital Improvements. This document constitutes the University's formal request for capital funding from the State for the upcoming budget year and also identifies projects for which funding is expected to be requested in subsequent years. It is transmitted to the Governor for consideration and inclusion in the Governor's Budget.

Final versions of the project planning guides are provided to the Department of Finance and the Legislative Analyst's Office in support of the funding request at the same time the Regents' Budget is sent to the State for consideration. In addition, background information on the University's capital needs and funding requests is provided through campus visits. These campus meetings include staff from the Department of Finance, the Legislative Analyst's Office, and legislative budget committee consultants, as well as key campus administrators, faculty, and staff. The purpose of the meetings is to provide State staff with the opportunity to ask questions and talk with campus faculty and facility planners about specific project proposals. University staff work closely with State staff to answer questions and provide additional information before and during formal legislative hearings on the University's capital budget.

Although the process for identifying facilities needs and defining the scope of individual projects is similar for projects to be funded from either State funds or non-State funds, there are differences in the ways individual projects are reviewed and approved. The primary difference is that projects to be funded from non-State sources are approved, not as part of a comprehensive annual program, but on a project-by-project basis throughout the year.

Display 13 on the next page shows a general timeline of the University's process for planning and approving State-funded projects.

DISPLAY 13 *Calendar of the University of California's Process for Developing the Capital Improvement Budget in a Typical Year*

Month	Regents' Budget (i.e., 1990-91 Budget)
February	Office of the President (OP) issues instructions to the campuses for preparation of new budget funding requests.
March	Campuses submit requests for capital budget funding to OP.
April	Campuses submit draft PPGs and related documentation for project funding requests to OP.
June	Draft Regents' Budget is reviewed internally.
August	Campuses submit final PPGs and documentation for project funding requests to OP. Final decisions of Regents are made.
September	Regents Budget for Capital Improvements is released. Supporting documentation is sent to State.
October	OP conducts visits to campuses with State staff to review campus issues and discuss capital funding requests.
November	OP engages in discussion with Department of Finance concerning Governor's Budget.
December	OP responds to questions raised by Legislative Analyst regarding projects.

Note: It is important to understand that this calendar outlines the fundamental steps in the process for developing the Capital Improvement Budget in a typical year. The actual process is considerably more complex and less structured than the calendar may suggest.

For example, the calendar addresses the approval process for new projects in the one year in which State funding is requested; it does not reflect either the multi-year nature of that funding process or the several years of planning and project development that precede the request.

The calendar pertains only to capital projects to be State funded. It does not apply to projects to be funded from non-State sources.

Source: University of California.

7 *State Budgeting*

ONE of the strongest instruments for exerting State policy influence into public higher education is the State budget. The budget is one of the predominant points of focus for the Governor, the Legislature, and higher education leaders themselves. This importance is understandable: It is through the budget that new initiatives are often started, and it is where institutional performance is evaluated. These decisions can and do get made in other places, but there is no other place where all of the decisions come together in the same way as in the State budget.

In the context of short- and long-range planning, an understanding of the structure and dynamics of the State budget process is important for several reasons:

1. The timeline of the budget process necessarily dictates the timetable of many institutional research and planning activities.
2. The formulae and criteria applied in State budgeting will dictate many of the issues and analytic questions addressed through institutional research and planning.
3. Institutional perceptions of the budget process will likely shape the planning estimates of the availability of State resources. These estimates on the availability of future resources will inevitably affect which short- and long-range institutional goals come to be viewed as realistic.
4. The State budget process contains numerous financial incentives and disincentives for a wide range of the segments' activities. Since any institution will naturally gravitate toward where the money is, an understanding of the incentives inherent in the various State funding formulae and criteria gives important insights into a wide variety of institutional practices of the segments.

In this section of the report, Commission staff describes the system of State budgeting used in California for public higher education in three parts. first, with an overview of the State budget process; second, with a description and an analysis of the rules of the support budget process as they apply to the three systems; and finally, with a description and analysis of the rules of the capital outlay budget process as they apply to the three segments.

Throughout this part of the report, the term *public higher education* means the State-funded budgets for the University of California, the California State University, and the California Community Colleges. The analysis excludes discussion of funding for medical education, teaching hospitals, and the University's Department of Energy laboratories, as well as student financial aid, the California Maritime Academy, Hastings College of the Law, and the California Postsecondary Education Commission

Overview of the budget process

In California, almost all expenditures and revenues are put into a single budget bill, which must be enacted by the Legislature by June 15 of each year to go into effect on July 1. This means that appropriations for all programs -- whether they are for highways, public schools, welfare, or higher education -- go into a single piece of legislation. This budget system contrasts with most other states and with the federal government, which generally pass several separate appropriations bills each year: a highway bill, a health bill, an education bill, and the like.

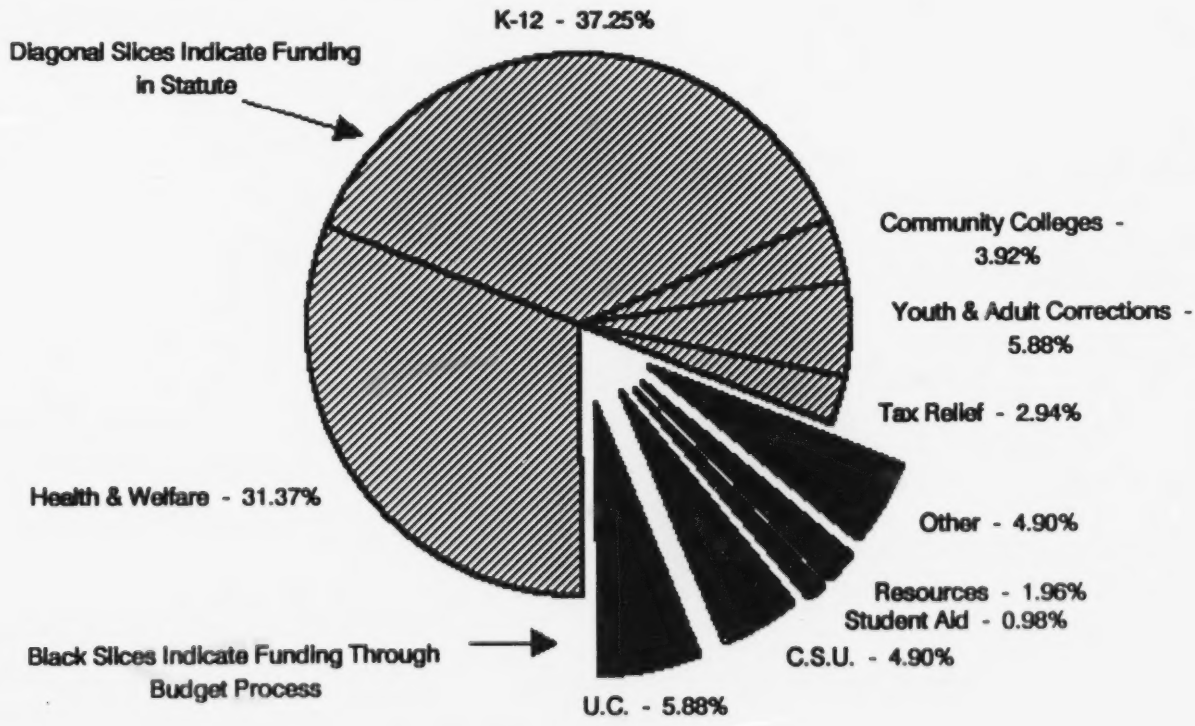
The fact that California puts almost all of its expenditures into one big budget bill, coupled with the fact that California is required under its Constitution to balance expenditures with revenues, has meant that the budget process in this State is generally recognized to be one of the most sophisticated in the country, because the process forces decisions about spending priorities and trade-offs between programs.

General Fund revenues -- or funds that can be spent for any purpose -- account for roughly 57 percent of all State spending in California. The various activities of State government vary widely, however, in the extent to which they are dependent on General Funds. For instance, highways are paid for with special taxes that cannot be used for anything else, whereas most health and welfare expenditures are matched dollar-for-dollar with federal funds. On the other hand, education (both K-12 and higher education) is heavily dependent on General Funds. Even in the two university systems, which have multiple sources of funds, they rely almost exclusively on General Funds for the core instructional program.

In the early post-Proposition 13 years (1978-1983), when the tax-cutting movement and a recession combined to force major cuts in General Fund programs, competition within the educational system for resources was fierce. Since that time, the Gann appropriations limit, and most recently the passage of Proposition 98, have contributed to limit even further the proportion of State General Funds that are available for expenditure in postsecondary education. An additional factor constraining the availability of State General funds is the extent to which annual baseline adjustments are set in statute for certain major spending categories. This leaves the Governor and the Legislature even less flexibility in budgeting for those categories without statutorily defined funding formulas. Display 14 shows the distribution of State General Funds by major funding category as well as those portions of the budget for which annual funding is required through statutory mandate.

California's budget is an incremental budget. Institutions submit annual requests for funds to the Department of Finance. In general, for all pro-

DISPLAY 14 State General Fund Expenditures 1987-88


K-12 - 37.25%
Diagonal Slices Indicate Funding in Statute
Community Colleges - 3.92%
Youth & Adult Corrections - 5.88%
Tax Relief - 2.94%
Health & Welfare - 31.37%
Other - 4.90%
Resources - 1.96%
Student Aid - 0.98%
Black Slices Indicate Funding Through Budget Process
C.S.U. - 4.90%
U.C. - 5.88%

Source: Legislative Analyst's Office, *Analysis of the 1988-89 State Budget.*

grams (not just those in higher education), the Department uses agreed-on formulae to evaluate budgetary requirements. Formulae are either negotiated between the institutions and the Department, or are set in statute. These formulae use readily accessible yardsticks of workload (for example, miles of freeway, welfare caseload, or number of students) that are objective measures of how much money is required for programs. Virtually all budget formulae are developed through studies of actual spending patterns, which then serve as benchmarks for negotiations upward or downward. Because of this, budget formulae tend to perpetuate status quo spending patterns: a program that has received money in the past will continue to get it, and vice versa.

For State operations budgets, the formulae generally translate workload into personnel -- or positions -- required for the work to be done. For all programs, each year's budget is made up of the previous year's budget base, adjusted by formula for workload, plus funds for inflation (price increases) and salary increases. New program initiatives are then added to the adjusted base. New program initiatives take many forms, and can include re-calculations of the budget formulae to enrich the existing program. In most years, new program initiatives comprise a very minor percentage of total funds spent. The overwhelming majority of new funds are computed as increases or decreases to the base budget.

Incremental budgeting strongly influences institutional behavior to maximize base funding, since virtually all new money emanates from the base. (It is a curious trait of budgetary behavior that baseline adjustments are rarely thought of as budget increases.)

State operations vs. local assistance

The process used to make "baseline adjustments" is different for programs classified as State operations and those known as local assistance. This categorization is a throw-back to the pre-Proposition 13 era, when local government had the primary responsibility for managing and paying for these services and programs. The severe cutbacks in property taxes that resulted from Proposition 13 have blurred these distinctions, since the State now pays for the majority of local assistance programs The major expenditure components of the two different budget categories are outlined in Display 15 below.

DISPLAY 15 State Operations and Local Assistance

State Operations	Local Assistance
University of California	Medi-Cal
	SSI/SSP
The California State University	AFDC
	K-12 Education
Department of Corrections	Community Colleges
	Developmental Services
All Other State government	Tax Relief
	Public Health

Source: California Postsecondary Education Commission.

After the Department of Finance puts together its baseline budget, the Governor reviews the budget to see if it fits his spending priorities. If the baseline costs more than projected revenues (revenue projections are also done by the Department), the Governor has the choice of making cuts or proposing a tax increase (or revenue enhancements) to the Legislature. The Governor also will make the final decisions about new programs or initiatives.

The Governor submits his proposed expenditure plan to the Legislature in January of each year. The Legislature reviews the Governor's spending plan in budget hearings held over the next five months. The Legislature can rewrite the Governor's Budget any way it sees fit (by adding, or deleting programs, or changing the source of funds for them). The Senate and Assembly versions of the budget are adopted by a two-thirds vote of the respective houses, and any discrepancies between the two are resolved in a Joint Legislative Conference Committee. After reconciling differences between

the two houses' version of the budget, the final budget is sent on a two-thirds vote to the Governor by June 15.

The Governor has line-item veto power, and can reduce or delete any item of expenditure but may not increase them. The budget that is signed into law by the Governor on July 1 then goes into effect for the next fiscal year.

The power of the executive

While the political dynamic of the budget process as it affects the relation between the Governor and the Legislature is an interesting and colorful one, it has been extensively commented on elsewhere. However, one important fact about that dynamic is particularly germane to this analysis. The Legislature under the Constitution has exclusive power over all appropriations, which means that everyone -- including the Governor -- has to get the Legislature to pass a bill in order to get money. This means that two-thirds of the members of both houses have to agree in order to spend money. Because the Governor has the power to propose a single spending proposal, the power of the executive over state spending priorities is enormous. Unlike other states, California's single budget bill allows the Governor to confine his efforts to one piece of legislation. In fact, the Governor does not have to pay attention to any other legislative priorities until the budget bill is signed into law. (Under the Constitution, no spending bill -- except for emergencies -- can be signed by the Governor until the budget is enacted.)

This fact, coupled with the incremental budgeting approach, in which baseline adjustments eat up virtually all new money, the two-thirds vote requirement, and the line-item veto power, make the California budget one of the strongest executive budgets in the country.

The annual support budget process for postsecondary education

The baseline adjustment process for the two universities is the same as for all state agencies. It is a two-step process: salary increases (which include cost-of-living adjustments and merit salary adjustments), and price increases.

Salary increases in the universities

For the salary cost of living increases, requests for faculty salary increases are separated from those for staff increases. For staff increases, the universities generally ask to get the same amount that is made available to all other state agencies. For faculty salaries, the California Postsecondary Education Commission conducts an annual survey of faculty compensation for institutions across the country which are thought to be comparable to the University of California and the California State University systems. On the basis of this survey, the Commission then computes what percentage increase (or decrease) is needed to bring salary levels to parity with those offered by comparison institutions. This parity figure then becomes a benchmark for the two Governing Boards in preparing their budget requests, as well as for the Department of Finance in deciding what amount to propose to the Governor. As always, the final decision about how much to propose for faculty and for staff increases rests with the Governor.

For merit salary adjustments, formulae which are negotiated between the institutions and the Department of Finance are used to calculate the amount of money which will be needed to pay for normal merit increases and for promotions for faculty and staff. The formulae are based on studies done in the distant past of institutional advancement and promotion patterns, and differ somewhat between the institutions. The University of California gets merit and promotion funds as a percentage of the base, and the State University on a position-by-position basis. Approximately 1 percent of the salary base is allocated for merit and promotion increases for each of the two systems.

Once the Legislature is through with the budget, funds for cost-of-living adjustments and for merit increases are generally lumped into a single budget category to be spent by the institutions for employee compensation. Pursuant to the collective bargaining process, it is up to the institution (in consultation with employee groups, if there is formal collective bargaining, or less formally if there is not) to figure out how to allocate these funds.

Price increases in the universities

For non-salary price increases, the Department of Finance in the fall of each year sends to each State agency something known as the price letter which gives that year's guidelines for how much the agencies can ask for inflationary adjustments. For items where inflation has been particularly high, the Department will create a separate price category that allows higher-than-average inflationary adjustments. Examples of things that have historically had separate price category status are utilities, travel, postage, and library books. Items that are not in a separate price category are assigned an overall price level, which is usually set to equal an inflationary index known as the "Gross National Product price deflator" -- a standard index published by the federal government, which purports to measure cost increases for goods and services purchased by state and local government.

Increases for the community colleges

Community colleges receive their inflationary adjustment in the same way as local assistance budgets. A cost-of-living adjustment that is required to be given is set in statute for local assistance budgets. Unlike the two university segments, which separate salary, merit, and price-increase funding, community colleges receive a lump-sum cost-of-living adjustment on their entire base. The cost-of-living adjustment for community colleges is statutorily set to be the Gross National Product price deflator, which in 1988 was 3.8 percent. Once the institution receives the funds, it is up to the individual districts to determine how to spend the money -- on across-the-board raises, for promotions, or for non-salary increases. In most districts, these decisions are reached through the collective bargaining process.

The result of the baseline inflationary adjustment process is that there are funding disparities between inflationary, cost-of-living adjustment, and merit salary adjustments between the two universities and the community colleges. In periods of inflation, where there are separate price categories for items of expenditure such as postage or utilities that are greater than the Gross National Product deflator, these disparities result in an apparent underfunding of the Community Colleges' budget. In periods of low inflation or during times when the deflator is greater than the parity figure for university salaries, the opposite is true. This latter condition -- where the disparities have advantaged the community colleges -- has not occurred during the post-Proposition 13 years. The accumulated underfunding of community colleges budgets has occurred not because of an explicit policy decision, but because of technical glitches in the funding formulae.

Workload formulae

The second part of the baseline adjustment procedure is a process for adding or taking away funds for workload. For all three systems, the workload formulae are functions of enrollments -- full-time-equivalents in the university systems, and average daily attendance in the community colleges. What this means is that the resources needed to fund all categories of expenditures -- from instruction to administration -- are related to the number of students in the institution. The biggest difference between full-time equivalents and average daily attendance as a measure is that full-time equivalents are related to the academic credit associated with a course, while average daily attendance is computed on the basis of seat-time or contact hours.

Building full-time equivalents: the credit-hour function

The critical measure for the universities that drives full-time equivalents are student credit hours (also sometimes known as the student credit units and abbreviated as "SCH" or "SCU"). A student credit hour is the credit (that counts toward graduation) that each student receives for taking a class.

Credit hours relate to the amount of time a student spends in a class. (For instance, a class that meets one hour a day five days a week is generally a five-unit class.) Student credit hours translate into full-time-equivalent students without regard to differences in discipline, or resources required to teach. For example, both universities earn the same num-

ber of full-time-equivalent students for the following:

1. A five-unit upper-division chemistry class enrolling 20 students;
2. A four-unit lower-division sociology class enrolling 25 students; or
3. A one-unit physical education class with 100 students.

A full-time-equivalent undergraduate student at both universities takes an average of fifteen units during each term of the academic year. (Quarter system units are counted as roughly 1.5 times semester system units.) Therefore, one full-time-equivalent undergraduate is one student who takes 45 quarter credit units of classes during the year, or two students who together take 45 units, etc. A full-time graduate student at the University takes an average of 12 credit units during a term, as opposed to 15 at the State University.

The University, as a matter of policy, discourages part-time enrollments for undergraduates and graduates; 92 percent of its undergraduates and 96 percent of its graduate students are full-time students. The State University system encourages part-time students; only 72 percent of its undergraduates and 23 percent of its graduate students are enrolled full time. This means that there are almost twice as many students in the California State University per full-time equivalent as in the University of California.

The University's budget formulae

The enrollment-related budget formulae for the University of California are very simple. The institution gets one new faculty position, accompanied by related support, for each 17.61 full-time equivalents in enrollments. (Once a position is in the base, it automatically gets cost-of-living and merit-salary adjustments each year). The University counts one full-time-equivalent enrollment for each 15 undergraduate credit hours, and one full-time equivalent for each 12 hours of class for first-stage graduate students -- for example, master's degree students and first-stage doctoral students. For students in Ph.D. programs, after they have advanced to candidacy, each of them is counted as one full-time equivalent for nine quarters, after which they can no longer be counted for enrollment purposes. Teaching assistant positions are allocated on the ratio of one position for every 44.20 full-time-equivalent undergraduates. Once the University gets the money, it makes decisions about how to spend it -- on faculty full-time equivalents, or staff, or on instructional support. The formulae generate enough money to pay for employee benefits and clerical support for each new faculty full-time equivalents.

The State University budget formulae: mode and level

The State University's budget system is much more elaborate. It has well over a hundred different workload formulae that are used to negotiate baseline adjustments with the Department of Finance. Virtually all of these formulae are enrollment-related. Like the University, the key academic components -- new faculty and staff positions, library resources, and the like, are all driven by full-time equivalents and student credit hours. Unlike the University, requirements for staff for student service expenditures are driven by headcount enrollments rather than full-time equivalents.

Like the University, most State University resources are tied to new faculty positions. For new faculty positions, the State University and the Department of Finance calculate the number of positions required using a system known as the mode-and-level approach. Under the mode-and-level approach, the State University weights the student credit units by different levels and types of instruction, to take into account differences in costs for different kinds of instruction. The methodology is based on three elements:

1. The staffing categories, which consist of 16 modes (lecture, laboratory, physical education, etc.) and three levels (lower division, upper division, and graduate) of instruction;
2. Ratios of student credit units to full-time-equivalent faculty in each of these categories; and
3. The distribution of student credit units among the staffing categories.

What this means as a practical matter is that the system uses historical information (from the 1973-74 academic year) to evaluate how faculty time was spent, and then projects the number of positions required to continue that level of support against each year's enrollments. The weights that have been developed earn more faculty full-time equivalents for upper-division and graduate courses than for lower-division coursework. The effect of the formulae on the average is to allocate one new faculty position for each 18.00 full-time-equivalent students -- a ratio that historically has been very close to the one used by the University. Because of the mode-and-level approach, however, the State University is often in the position where its enrollment goes up and its budget goes down. Such was the case in 1985-86, when lower-division enrollments went up, causing an overall shift toward lower-cost instruction. Because of the shift, the State University had its budget cut by 86 full-time-equivalent faculty.

Unlike the University, the State University does not receive positions for teaching assistants, and the formulae separate allocations for new faculty positions, staff positions, and support. For each 1,000 new full-time equivalents in mode-and-level adjusted enrollments, the State University gets 55.49 new full-time-equivalent faculty, 15.25 new support staff, and 15.73 new administrative positions.

Internal allocation flexibility: internal distribution of resources

Once the universities receive funds from the State, they are free to allocate the resources in the way that they see fit to meet current priorities and accommodate student demand. The reallocation can occur in either of two places.

- First, the central administration may make some reallocation decisions between the campuses. This generally happens when enrollment patterns are uneven between the campuses, and one campus experiences declines while another grows. In both systems, if one campus is in a period of enrollment decline, resources are frequently pulled away from other campuses in order to shore them up.
- Reallocations also occur at the campus level. Faculty and other resources that are earned through enrollments in one department will be allocated to other areas, sometimes because they are underenrolled and need the help, or because the campus wants extra money to go into that area. In general terms, resources are reallocated away from lower-division classes, to upper-division and graduate areas.

The issue of internal flexibility for reallocation becomes contentious primarily in periods of enrollment decline. If the enrollment declines are slight or temporary, or if demand in not uneven among departments, the problem can be accommodated. However, if enrollment declines continue, the political as well as the educational costs of protecting positions in underenrolled areas becomes severe. At that point, decisions have to be made about whether to try to increase enrollments or to take away positions. Because tenured faculty positions are essentially owned by the department where tenure is earned, scaling down academic programs when student demand shifts is a very long and slow process. Because the process is such a slow one, and extracts such costs from the institutions, the preferred management option for both institutions is to keep some percentage of total faculty resources in temporary positions, assigned to faculty who cannot or will not be tenured.

For the two university systems, the issue of internal reallocation and uneven demand is kept within the institutions, since overall enrollment has been stable or growing.

Community college finance

The finance system for California's community colleges differs significantly from that used for the two university systems. The fundamental reason for the difference is historical, in that the community college system grew out of the public school system. The community colleges' finance system has gone through several upheavals in the last ten years, the biggest being Proposition 13, the imposition of tuition in 1984, the passage of AB 1725 (Vasconcellos) in 1988, and the recent voter approval of Proposition 98. As noted earlier in this paper, there is now a widespread recognition that the current sys-

tem of community college finance is inadequate. It is expected that the next five years will see substantial reform in the way the community colleges are funded, as the provisions of AB 1725 and Proposition 98 are implemented.

Prior to Proposition 13, community colleges were funded 53 percent with local property tax revenues and 41 percent with State General Funds. At that time, districts that choose to tax themselves at a high rate were able to keep their funds to pay for better colleges. State funds were layered on top of the district funds and were allocated in inverse relation to district funds so as to equalize funding among districts. The relation of State and local property tax revenues has reversed since Proposition 13, and the colleges are now funded 62 percent with State General Funds and 27 percent with local property taxes. The fact that 27 percent of revenues continue to come from local property taxes may give a false impression that these funds are available for special, local purposes or are somehow susceptible to local control. The fact of the matter is that Proposition 13 eliminated local fiscal control from community colleges' local governing boards.

Appropriations to the system

On May 15 of each year, the Department of Finance notifies the Legislature and the Chancellor's Office of the community colleges of the amount of property tax revenue expected to be available during the next fiscal year. The final budget act enacted by the Legislature takes that estimate into effect in figuring how much General Funds are needed to pay for the community colleges. If the Legislature and the Governor agree that, for example, $1.5 billion will be needed to pay for the community colleges, and the May 15 estimate of property tax revenues is $500 million, then the budget act will appropriate $1 billion in General Funds to make up the difference. Each March 15, actual property tax receipts are recorded, and adjustments are again made in General Fund appropriations if revenues are higher or lower than expected.

Districts that were high property tax districts before Proposition 13, and which contribute more in revenues than other districts, simply get fewer State General Funds to make up the difference. (Districts that receive State equalization funds may get more for other purposes.) If voters want to increase their taxes to enrich the core funding for their local colleges, they cannot do it currently, since existing law requires any extra local revenues to be spent only for community service classes (which the State won't pay for), capital outlay, or furniture. Any increase in the general property tax rate for community colleges would go straight to the State to offset the need for General Funds, and not a dime of it would be seen by the district. The funding system for community colleges can therefore be seen as a thinly disguised State system.

Unlike the two university systems, most funds for community colleges are appropriated on a cash grant basis, based on enrollment, and not tied to full-time-equivalent faculty. With the exception of categorical aid programs (such as Education Opportunity Programs and Services), each college is then free to take the funds and spend them on new faculty positions, for counselors, travel, or utilities, or whatever, depending on where the highest need is. Absent normal audit controls, the only expenditure control on community colleges' main apportionments is the so-called 50-percent law, which requires that at least 50 percent of each districts' "Current Expense of Education" expenditures be spent on instructors' salaries. The quality of expenditure information available to compare the way that money is spent in the community colleges to the two university systems is very poor, since community colleges have historically not required the districts to report expenditures in uniform categories.

Allocation of statutory amounts among districts

As noted earlier in this paper, enrollment in community colleges is measured by average daily attendance (ADA). The amount of money that each district gets per ADA is sometimes known as the "foundation" or "revenue limit" level. The level is a function of various formulae that try to equalize the funding between districts and protect other legislative priorities. The "factors" that influence the amount per ADA that a district gets are:

1. Credit or noncredit. (Noncredit ADA get less money in most cases.)
2. Whether a district is growing or declining, and by how much. (In recent years, the Legislature has not allowed any growth money for commu-

nity colleges. When growth was allowed, new ADA were funded on an "incremental" rate -- that is, at two-thirds on the dollar of the full ADA rate. Incremental funding is a device used in the K-12 system as well, and is justified theoretically by the argument that short-term increases in ADA can be accommodated by funding them at the margin.)

3. The size of the district. Very small districts get a little more per ADA than do larger districts, allegedly because the unit costs of administration for small districts are larger than for large districts.

4. The "wealth" of the district. Districts with low overall revenue per ADA get "equalization" funds. The equalization formula for Community Colleges is roughly analogous to the Serrano adjustments in the K-12 system. It is intended over time to reduce the funding disparities between districts.

5. Declines in a district's enrollment. Districts in enrollment decline have, in the last few years, been protected from having their budgets cut for two years. If a district loses 10,000 ADA one year and gets the ADA back in the second year, then the budgets are never adjusted downward.

Unlike the two university systems, there is very little room for reallocation of resources among districts by the Chancellor. The Chancellor's Office computes the effect of all of the "factors" for each district, and then allocates resources accordingly. If a district is short of funds, the Chancellor does not have the statutory authority or the funding flexibility to reallocate resources to make up for that shortfall. When such shortfalls occur, districts generally come to the Legislature to ask for more money, either in the form of supplementary appropriations or loans.

The State capital outlay process

During the summer prior to the year in which capital outlay funding is being requested, the segments provide the Department of Finance and the Legislative Analyst's Office with updates of campus long-range capital outlay plans, Program Planning Guides for any projects being requested for the coming year, and the draft system capital outlay budget. The projects are reviewed by the Legislative Analyst and the Department of Finance for consistency with stated academic planning goals, consistency with existing space and utilization standards, and the cost-effectiveness of the proposal compared to other alternatives. The relative priority of one project compared to other projects is not considered at this phase of the process.

State agency review of proposals

Upon review of the five-year plans and the various program planning guides, the Department of Finance and the Legislative Analyst's Office arrange for and conduct Scope meetings on campuses requesting projects for which one or both agencies have questions or concerns. While attending Scope meetings, representatives of the Department and the Legislative Analyst meet with the deans, faculty, and planners most directly involved with a proposal, as well as the campus's senior administration, in order to gain a better understanding of a project and answer any specific questions they might have had. At this point, the representatives are looking for project justification on two levels: First, they look to the deans and faculty to ensure that a project is justified based on agreed-upon academic program goals and the mission of the institution and/or segment; second, they look to the chief campus planners and architects (if applicable for the segment) to ensure that the project meets agreed-upon space, utilization, and design practices.

It is important to point out that not all the segments follow all the space and utilization standards, and the standards are not imposed on the segments for all the same purposes. For example, in the community colleges the State requires that the space and utilization standards be used to calculate existing space inventory, the amount of new space required to accommodate the demonstrated need, and the purposes to which the new space can be put. On the other hand, the University of California is only required to use the standards to calculate the amount of new space required to meet their demonstrated need, and then only in certain space categories. A persuasive case which has been laid out by the University indicates that the standards may be out of date and may no longer meet important academic needs. The University is thus

permitted to justify its proposals using analytic approaches other than the space and utilizations standards applied to the other segments. The Postsecondary Education Commission is currently undertaking a study to review the existing space and utilization standards and will provide recommendations to the Legislature and the Governor on how the standards should be revised, if the study determines changes are necessary. This study is scheduled for completion by next December.

Upon completion of a scope visit on a specific project, the appropriate campus or segmental facilities planners will endeavor to provide any additional information to the Department of Finance and the Legislative Analyst on questions or concerns which could not be addressed on location in the Scope meeting.

In September the segmental governing boards consider and approve the draft capital outlay budgets provided by the system's administration. These budgets may reflect changes in the cost of specific projects as a result of changes agreed upon in Scope meetings held before approval of the final budgets.

Upon adoption of the segments' final capital outlay budgets, Scope meetings continue, covering additional projects. At the same time, segmental representatives enter into extensive discussions with the Department of Finance on inclusion of their capital outlay requests into the Governor's budget. These discussions usually center on two basic issues: First, the total amount of funding likely to be made available to the segment for capital outlay; and second, how far down an individual segment's priority list their share of the available funding will allow them to cover. The Department of Finance does not usually dispute the specific capital outlay priorities defined by the segments, but rather focuses attention on the likely aggregate funding to be made available to address those priorities.

Development and analysis of the Governor's budget

Upon completion of negotiations with the segments, the Department of Finance prepares the draft State budget for the Governor's review, revision, and eventual approval.

In mid-December the Department of Finance furnishes the Legislative Analyst with confidential galleys of the Governor's budget, allowing the Legislative Analyst to begin her analysis of the budget as soon as possible after decisions are reached in the executive branch.

The Governor's budget is released publicly in early January. This is also the general deadline by which the Legislative Analyst expects any unresolved questions on the specifics of a segment's capital outlay project to be answered. This period signals the beginning of the most frenzied time of the year for the Legislative Analyst -- preparation of the Legislative Analyst's *Analysis of the State Budget*. The Analyst works intensively from the receipt of galleys in December through late February, when her *Analysis* is released publicly. The Analyst analyzes capital outlay projects included in the Governor's budget on three basic criteria: First, the project's compliance with applicable State policy guidelines, such as the policy not to provide State funding student housing or student union facilities; second, the project's compliance (depending on the segment) with applicable space and utilization standards; and finally, the reasonableness of the project's estimated cost.

Depending on the result of the analysis, the Analyst may recommend any of a number of options to the Legislature. These include:

1. Recommend adoption of the item.
2. Recommend adoption of the item, pending receipt of additional information (such as preliminary plans for the project).
3. Recommend adoption of the item, contingent upon adoption of budget language or supplemental report language that further clarifies or defines an issue of concern to the Legislature.
4. Withhold recommendation, pending receipt of additional information
5. Recommend deletion, reduction, or revision of the scope of the item.
6. Project raises policy issue to be resolved by the Legislature.

The final recommendation option for the Analyst covers policy issues or other contingencies not dealt with in previous guidelines or agreements. One example of a policy issue raised by the Analyst in re-

cent years is whether the University of California should give higher priority to construction of research space as opposed to instructional space.

Legislative action on the budget

After release of the Analyst's *Analysis*, legislative hearings are scheduled by the appropriate subcommittees of the Assembly Ways and Means Committee and the Senate Budget and Fiscal Review Committee. Legislative review of the segments' capital outlay budgets can cover literally any aspect of any proposed projects, however, discussions generally revolve around the issues as defined by the Legislative Analyst's Office and the Department of Finance. After extensive hearings, in which some projects receive detailed review and other noncontroversial projects minimal review, each house adopts its own version of the State budget, including the segments' respective capital outlay budgets.

After adoption of each house's version of the budget, the Legislature forms a Conference Committee, made up of the Chairs of the Senate and Assembly fiscal committees and four other members. The Conference Committee meets with the sole purpose of resolving differences between each house's version of the budget. The Committee normally does not consider any item for which there is not a discrepancy between the two budgets. It should be noted also that once an item is thrown into Conference, the Committee considers the issue under self-imposed guidelines but has complete discretion to handle the item any way it sees fit. The Committee can adopt one house's version of the item, it can augment the item, delete it completely, or attach supplementary or budget control language. Further, during Conference Committee deliberations, the Committee generally relies on advice from the Legislative Analyst and the Department of Finance on how to resolve specific issues.

Since segmental representatives are generally not permitted to address the Conference Committee during its deliberations, this is one major point in the process where the Legislative Analyst and/or the Department of Finance can utilize the mechanics of the process to effect change in segmental budget requests. By recommending the creation of discrepancies on controversial items in the Assembly and Senate versions of the budget, either control agency can effectively cut the segments out of formal deliberations to resolve the issue at the Conference Committee level. Of course the segments are completely free to make their case on an item to members of the Conference Committee outside the confines of the formal hearings.

After reconciling all budget discrepancies in Conference, the Committee forwards a unified budget back to each house for their adoption, on a two-thirds vote. Upon adoption by the Legislature, the Budget Bill is forwarded to the Governor for his review, revision, and adoption. The same blue pencil options outlined in the State Budget section of this document are operative here, except that so long as the Legislature's capital outlay appropriation for postsecondary education is within the aggregate limit set by the Governor in his initial budget, he does not usually partake in rewriting appropriation amounts in the segments' specific capital outlay proposals.

Authority to spend funds

Contrary to what many believe, after enactment of the Budget Bill by the Legislature and Governor, the process is not over. While the segments have received their appropriation for the coming year, with capital outlay programs they must still receive authority to spend the money. This authority is granted by the State Public Works Board.

The Public Works Board was created, as the name implies, to provide oversight and control on public works projects being undertaken by the State. The Board is composed of the Director of Finance, the Director of the Department of Transportation, and the Director of the Department of General Services. The Board serves to provide an additional level of administrative control to ensure that capital outlay monies are expended in a manner consistent with the intent of the Legislature and the Governor.

Specifically with regard to postsecondary education, the Public Works Board reviews approved segmental plans to ensure that specific projects are consistent with relevant budget and scope language, and other project parameters covering gross square footage, assignable square footage, primary use of the facility, and the space allocation plan envisioned in the project. Board review generally centers on certification of the appropriate completion of the previous phase of a project's develop-

ment. For example, in the initial phase of a project's development, the Board does not require review in order to authorize appropriations to undertake preliminary planning for a facility. However, in the next year of the project, a segment must undergo Board review of the preliminary plans before authorization of funding for working drawings Likewise, working drawings must be reviewed by the Board before funding for construction can be authorized. The Board does not involve itself in authorizing spending for equipment funds upon completion of a project's construction phase. The Board is also the body that reviews changes in the scope of specific capital outlay projects which may occur after the project's appropriation is made. Scope changes sufficient to trigger potential Board review can occur as a result of a project's deviation from applicable budget or supplemental report language, other agreed-upon project parameters, or changes in the estimated cost of the project.

Scope changes requiring Board review can cover issues as minor as substituting carpeting for hardfloors (budget control language specifically limits the segments' ability to make this change), to issues as major as substantial design changes in a proposed facility. Further, cost-overruns more than $50,000 or 10 percent of a project's appropriation require notification of the Joint Legislative Budget Committee, notification of the relevant chairs of the legislative fiscal committees, and Board approval. Cost-overruns under $50,000 or 10 percent of a project's appropriation do not require Board review, and overruns over 20 percent require legislative approval in the Budget Act.

The Department of Finance serves as the chief State control agency monitoring progress on the segments' capital outlay programs. In the event that a segment recognizes the need for Board review of a project scope change, they inform the Director of Finance. If necessitated by the proposed scope change, the Department of Finance notifies the chairman of the Joint Legislative Budget Committee and the chairs of the relevant legislative fiscal committees of the impending review, and they then have 20 days to review the scope change and advise the Board on whether or not the change is at deviance with the legislative intent of the capital outlay appropriation. If the Board receives no objection from the Joint Legislative Budget Committee after 20 days, that is taken to represent support for the scope change. After receiving input from the involved segment and the Budget Committee, the Department of Finance makes a determination as to whether or not the scope change is justified. Since the Director of Finance serves on the Board, the views of the Department on proposed scope changes are expressed through him. As an organizational matter, the Department of Finance serves as staff to the Board and is charged with ensuring that legislative intent is followed in the expenditure of capital outlay appropriations.

Upon review and approval by the Public Works Board of either a budgeted capital outlay appropriation or a scope change proposal, expenditure of the funds is authorized, and the segment can proceed with the project.

8 Conclusions

Long-range planning activities of the segments

1. *Overall planning capacity*

The University of California possesses a larger and more pervasive planning capacity than the State University, which in turn has a substantially larger planning capacity than the community colleges. These differences appear to impact the amount and type of short- and long-range planning which can occur, as well as the ability of the segments to articulate and analytically justify their plans once developed. We have no indication that the University of California's planning capacity is excessive, but rather that the other segments, especially the community colleges, need expanded planning capabilities. This need is especially acute on the campus/district level.

2. *Long-range planning efforts*

The University of California is well underway in a long-range planning effort which aims to define the University's likely enrollment demand and facilities needs through the year 2005. The State University has begun a parallel long-range planning effort, and the community colleges have not to our knowledge begun any sort of similar planning activities. It is likely that the immediacy of preparing for implementation of AB 1725, the recent passage of Proposition 98, and the limited planning capacity outlined in the body of this document have all contributed to limiting the ability of the community colleges to undertake this sort of effort at this time.

Enrollment planning and projections

3. *Reasonableness of enrollment projections*

The enrollment projections conducted by the segments and the Demographic Research Unit are carefully prepared and all appear to be reasonable. Any differences between individual projections are minor, on the margin, and do not change the policy implications that should be drawn from them.

4. *Community college enrollment projections*

The community colleges do not prepare their own enrollment projections, relying exclusively on the Demographic Research Unit. While the Unit's long-range estimates are sound, the absence of a process in the community colleges which forces an annual high level consideration of potential future enrollments appears to contribute to limiting the type and amount of other planning activities which occur.

5. *University of California graduate enrollment projections*

The University of California, unlike the State University, does not project graduate student enrollments based on demographic trends. Due to the overriding influence of national and even international variables on future Ph.D. enrollments (relevant only for the University of California), the University does not view it as useful to prepare estimates of future graduate enrollment levels based on demographic trends. Rather, the University's graduate enrollments are managed through application of a variety of academic, program, and State economic policy considerations, rather than demo-

graphic potentials. As a result, the University's graduate enrollment projections should be recognized as necessarily inexact estimates of future needs, based on inferences drawn from a wide variety of unquantifiable variables. The most direct quantitative link driving the University's estimates is the application of the assumption that major research universities must have a graduate undergraduate student mix of at least 20 to 80 per cent to maintain top flight programs.

6. *California State University enrollment projections*

The State University's long-range enrollment projections are preliminary estimates generated in the very early stages of its own long-range planning process. The substantial increases in these projections, as compared to previous Demographic Research Unit and State University estimates, can be attributed to the fact that they incorporate optimistic assumptions on progress in providing access to historically underrepresented students. These projections were prepared by the Office of the Chancellor and precede a request to the campuses to outline the extent to which they can individually accommodate growth through the year 2005. As a result of the preliminary and ongoing nature of the State University's planning process, it is likely that these enrollment projections will undergo revision over time, as a result of refinements in the projection model and discussions with the campuses.

Capital outlay planning

7. *Differences in capital outlay planning*

The segments differ in the way in which campus capital outlay proposals are internally justified and prioritized. The University grants broad discretion to campuses to develop and justify projects in a highly individualized manner. Likewise, projects between University campuses are prioritized at the systemwide level based on an individual analysis of each project and its relationship and contribution to meeting the unique academic planning goals of the campus proposing the project. On the other hand, the State University and community colleges (with differing levels of structure) assess the need for individual campus projects based on uniform systemwide need assessment guidelines. Similarly, individual campus proposals are prioritized into the systems' systemwide capital outlay budgets through explicitly defined statewide construction priorities which prioritize projects by space category and use of common "need standards." While the more centralized planning approaches utilized by the State University and the community colleges may be a necessary management decision driven by the larger size of these segments, the University of California's more decentralized approach provides a closer and more direct linkage between campus capital outlay proposals and the unique academic planning objectives of the individual campuses.

State budget and capital outlay approval process

8. *Differences in calculating workload formula*

While the State University's workload formulas are far more detailed than the University of California's, they are calculated on similar if not identical workload units (projected enrollment translated into faculty full-time equivalents). On the other hand, the community colleges' workload increases are calculated based on projected shifts in adult population translated into ADA. There are strong indications that limiting community college enrollment to adjusted shifts in adult population has had the effect of artificially "capping" community college enrollments.

9. *Differences in flexibility of internal resource allocation*

Unlike the two university systems, there is very little room for reallocation of resources among districts by the Chancellor's Office of the community college system. If a district is short of funds, the Chancellor's Office does not have the statutory au-

thority or the funding flexibility to reallocate resources to make up for that shortfall.

10. *Differences in criteria for approval of capital outlay projects*

In the past, the Legislature (through the Legislative Analyst's Office) has attempted to apply roughly equivalent space and cost guidelines between segments in recommending adoption or rejection of specific capital outlay proposals. However, since there have been differing levels of success in getting the segments to agree to these standards, and differing levels of success in getting the Legislature to enforce these standards equally on all segments, a process has evolved in which capital outlay proposals are analyzed and approved under different rules, depending on the segment proposing the project. As noted earlier in this report, the validity of these guidelines have become subject to question in recent years and are currently undergoing extensive review and study by the Commission. This Commission expects to complete this study by December 1989.

Appendix A

Prospectus for a Study of Long-Range Enrollment and Facilities Planning in California Public Higher Education

Background

Section 66903 of the California *Education Code* authorizes the California Postsecondary Education Commission to collaborate with the public segments on long-range planning and requires the segments to develop long-range plans that identify the need for and location of new facilities. The Commission also has responsibility for approving sites for new campuses or off-campus centers.

In addition to this statutory authorization for the Commission's involvement in long-range planning, the Commission for the Review of the Master Plan recently recommended a reinvigorated statewide planning process to be managed by CPEC (1987, p. 40):

> 24. The California Postsecondary Education Commission shall have the following responsibilities with regard to long-range planning in consultation with the segments: (1) development of a common definition of long-range planning; (2) development of a common set of assumptions upon which such planning is to be based; (3) review of segmental activities to verify that they periodically prepare and update long-range plans based upon the common set of assumptions; and (4) annual preparation of detailed 20-year projections of postsecondary enrollment in the public and private sectors at all levels of instruction, built upon the projections prepared by the Department of Finance.

In September 1987, CPEC formed an Ad Hoc Committee on Long-Range Planning to review the recommendations of the Master Plan Review Commission within the context of CPEC's overall planning priorities. The Ad Hoc Committee met three times and presented its final report to the Commission this past May 2, in which it concluded that the urgency of the planning priorities facing the State requires the Commission to assume a more active role in long-range planning (see Commission minutes of the May 2, 1988, meeting under Tab 15). It suggested that the Commission could be most effective by carving out several priority planning projects on which work could be started immediately. It presented a set of strategic planning principles that were adopted by the Commission as a litmus test for judging planning priorities, and it identified long-range enrollment and facilities planning as the highest priority project now facing the Commission. In this area, it suggested a slightly different approach than that proposed by the Master Plan Review Commission by recommending against CPEC's developing annual statewide enrollment forecasts independent from those developed by the Department of Finance.

The Ad Hoc Committee identified two major roles for the Commission to play in the area of long-range enrollment and facilities planning -- research and leadership. Its research responsibility centers on the integration of existing information as well as the development of new data, as necessary, relating to long-range enrollment and facility planning. Its responsibility of leadership centers on stimulating a focused and productive statewide debate over the major planning and policy issues surrounding long-range enrollment and facilities planning.

Adding to the call for the Commission to take a lead role in long-range enrollment and facilities planning, Supplemental Budget Language has recently been introduced in the State Legislature requesting that the Commission initiate its long-range planning process by developing recommendations for the Legislature and the Governor on policy variables that will influence State costs for new facilities through the year 2005. (The Supplemental Budget Language, as well as this prospectus, defines *new facilities* as expansion of existing facilities as well as construction of new campuses or off-campus centers in order to accommodate increased enrollments.)

Based largely on recent unexpected increases in the participation rates of eligible freshmen, the University of California anticipates enrollment pressure to

require new campuses by the year 2005, and the Office of the President has begun a planning process to identify options for meeting that demand. The California State University is now operating seven off-campus centers -- most of which will probably expand beyond their current size and scope, and one or two of which may become full-fledged campuses -- and it is currently planning an additional off-campus center in Salinas. Among the California Community Colleges, the Commission recently approved major expansion of an off-campus center at Petaluma in southern Sonoma County, and the Riverside and San Jacinto Community College Districts have developed plans for three new off-campus centers in western Riverside County for Commission approval.

Project justification

Currently, there is no coordinated or integrated statewide plan that determines how the State might accommodate and finance expected long-range increases in enrollment demand in public postsecondary education. At present, there are no official enrollment forecasts that encompass all three segments past the early 2000s. Although enrollment demand has been higher than expected for both the University and State University, no decision has been made as to whether these enrollments can be absorbed within existing capacity or whether new campuses will need to be built.

The decision-making, funding, and construction timelines inherent in the expansion or construction of major new educational facilities by the turn of the century require that planning begin immediately. The cost differentials between renovation of older buildings, construction of new facilities, and expansion of existing facilities need to be identified -- with the alternatives weighed in a cost-benefit context -- and mechanisms for making choices and meeting the associated costs must be developed. Transportation and other site development problems need to be identified and, when possible, integrated into local and statewide planning processes.

Finally, there is increasing State-level interest in long-term infrastructure needs, as well as concern over admissions/enrollment pressures at the University of California. Members of the Legislature and the Governor have expressed concern about the rising participation rates and the long-range costs associated with accommodating increasing enrollments. As previously mentioned, the 1988-89 budget contains language requesting the Commission to take a leadership role in this area. While it is not known as of this writing whether the language will be approved in the final Budget Act, the study outlined in this prospectus has been designed to accommodate the Legislature's mandate along with the Commission's planning priorities.

Project description

Commission staff will convene an Advisory Committee on Enrollment and Facilities Planning comprised of representatives from the Department of Finance, the University of California, the California State University, the California Community Colleges, the Association of Independent California Colleges and Universities, and the Office of the Legislative Analyst. In consultation with this group, the Commission will identify the forces that will influence demand for new educational facilities, including a review of available projections from the Department of Finance and the segments on expected enrollments through the year 2005. These forces will then be analyzed with respect to their susceptibility to State-level policy control. Based on this analysis, the Commission will submit a report by December 1989 to the Legislature and the Governor on the direction the State should take with respect to the major variables that will shape the costs of new facilities.

The report will, at minimum, include recommendations on:

1. The educational and fiscal policy variables influencing the need for new facilities by age of student and academic program type, including when traditional campus facilities are academically required and when non-traditional facilities can best meet demands for access and quality;

2. The relative State costs associated with construction of new space by segment, compared with the costs of renovation or expansion of existing facilities;

3. Space and utilization standards for public postsecondary education facilities;

4. Year-round operation as an option to reduce new facilities requirements; and

5. Priorities for construction of new sites by geographic region of the State.

Following this effort, the Commission will request the public segments to prepare enrollment plans through the year 2005 and, based on these plans, to prepare plans for facilities needed to accommodate anticipated enrollments. The latter will include plans for expansion of individual campuses and construction of new campuses or off-campus centers, as necessary. These plans are to be submitted by December 1990 to the Department of Finance, the Legislative Analyst, and the Postsecondary Education Commission for comment and review.

Relationship to other Commission planning projects

Several Commission projects are anticipated in the coming year, the results of which will be integrated into this long-range enrollment and facilities planning study. Of particular interest are studies related to space and utilization standards, the role of independent colleges and universities in postsecondary education, the development of revised guidelines for the approval of off-campus centers, and the review of admissions and transfer policies in public postsecondary education. While these projects are defined as separate Commission studies, they are also central to long-range enrollment and facilities planning. All necessary steps will be taken, when appropriate, to coordinate research efforts with the goals of minimizing duplication as well as developing a coherent and integrated Commission approach to long-range planning.

Project schedule

Staff expects to follow this schedule:

June 13, 1988: Policy Development Committee consideration of this prospectus.

June-July 1988: Formation of the advisory committee.

July-August 1988: Develop project workplan. Review and synthesis of previous State efforts in long-range educational facilities planning. Meet with segmental planning personnel and inventory segmental planning efforts. Meet with segmental enrollment planners and analyze segmental enrollment projection models. Prepare background paper.

September 1988: First meeting of the advisory committee.

November 1988: Progress report to the Policy Development Committee.

December 1988-September 1989: Draft Commission report, including policy criteria, in consultation with the advisory committee.

September 1989: Present the draft report as an information item to the Policy Development Committee.

November 1989: Present the draft report as an action item to the Policy Development Committee and the Commission.

December 1989: Transmit the report to the Governor and Legislature.

Reference

Commission for the Review of the Master Plan for Higher Education. *The Master Plan Renewed: Unity, Equity, Quality, and Efficiency in California Postsecondary Education*. Sacramento: The Commission, July 1987.

Appendix B

Differences in Mission and Size Among the Three Public Segments

University of California

Mission

The University of California is California's primary State-supported academic agency for research; it offers four-year undergraduate (baccalaureate) programs and graduate programs in a wide variety of fields; it has exclusive jurisdiction among public institutions over graduate instruction in dentistry, law, medicine, and veterinary medicine; and among public institutions it has sole authority to award the doctoral degree, except in fields where it awards joint doctorates with the California State University.

Campus

The University has eight general campuses throughout California and one health science campus in San Francisco. Each campus has its own distinct atmosphere and character. Some 150 laboratories, extension centers, and research and field stations on campuses and in other parts of the State strengthen research and teaching while providing public service to California and the nation.

Enrollment

The nine campuses of the University have a current enrollment of more than 161,400 students, 90 percent of them residents of California. Almost 20 percent of the students are studying at the graduate level.

Eligibility Pool

The University's freshmen are selected from among the top one-eighth (12.5 percent) of California high school graduates. Every qualified student who is a resident of California is eligible for admission at one of the University's campuses, although not necessarily at the campus or in the program of first choice. To be eligible for admission, students must meet the subject, examination, and scholarship requirements specified in the University's *Undergraduate Application Packet.*

The California State University

Mission

The primary function of the California State University is instruction of undergraduate and master's degree students in the liberal arts and sciences, applied fields, and professions, including teaching. Its faculty are authorized to undertake research to the extent that is consistent with this primary function. In addition, the State University offers joint doctoral programs with the University of California and with independent institutions in California.

Campus

The California State University has 19 campuses throughout California. Each campus in the system has its own unique geographic and curricular character, as multipurpose institutions.

Enrollments

The system enrollments total approximately 355,000 students, who are taught by some 19,000 faculty. Last year the system awarded over 50 percent of the bachelor's degrees and 30 percent of the master's degrees granted in California. More than one million persons have graduated from the 19 campuses since 1960.

Eligibility Pool

The system admits its freshmen from the top third of California high schools graduates.

California Community Colleges

Mission

California Community Colleges offer instruction through but not beyond the second year of college. The primary mission of the colleges is vocational education and preparation for university transfer. They grant vocational and technical certificates and the associate in arts and associate in science degrees. Through their community service and adult education programs, they offer noncredit classes in literacy, health, civic, technical, and general education. Many colleges offer apprenticeship training in a variety of vocational fields. All colleges offer programs fulfilling the requirements for the first two years of work at a four-year college or university. Forty-five percent of all community college courses are eligible for transfer to four-year institutions. The community colleges also offer a wide range of community service courses.

Enrollments

In 1988, enrollment in the community colleges was over 1.3 million students.

Campus

The California Community Colleges have 107 campuses that operate under 71 districts throughout the State of California.

Eligibility Pool

Any person who possesses a high school diploma or equivalent or who is of the age of 18 and can benefit from instruction is eligible for admission to a California community college. Also, California community colleges allow a limited number of students of any grade level to enroll with the consent of their school principal and acceptance by the community college president.

Appendix C

Methodology for Projecting Population for California by Race / Ethnicity with Age / Sex Detail, 1980 to 2020

THE Department of Finance used a baseline cohort component method to project the population by race/ethnicity. A baseline projection assumes no fundamental institutional changes or major changes to policies and practices related to fertility, immigration, emigration or domestic migration. A cohort component method traces a race/ethnic group having a common year of birth throughout their lives. As each year passes, cohorts change due to the action of mortality and migration. New cohorts are created by applying the fertility assumption to the women in childbearing ages.

The 1980 Census by sex, race/ethnicity, and single-year of age serves as the benchmark. Survival and fertility rates were computed based on actual data from the California Department of Health Services. Migration rates were estimated by analyzing 1970 to 1980 movements allowing for differential undercounts and inconsistent race/ethnic definitions between the two censuses.

Three basic assumptions were made in the projection process:

1. In 200 years, California's race/ethnic- and age-specific fertility rates will merge to one-half their current difference from national rates. The Census Bureau assumes the national race/-ethnic differentials will merge in the year 2050,
2. In 200 years, California's race/ethnic-, age- and sex-specific mortality rates will merge to one-half their current difference from national rates. The Census Bureau assumes the national race/ethnic differentials will merge in the year 2050.
3. There will be an annual average net in-migration of 215,000. Foreign immigration was held constant throughout the projection period and the residual domestic migration becomes net out-migration after the year 2000. Race/ethnic distributions are merged over time from the current mix to the world, national or State proportions as appropriate.

Using these assumptions, the benchmark population is projected 40 years into the future. Projections are controlled to the Baseline '86 projection series which was released in December of 1986. It is anticipated that these race/ethnic projections will next be revised following the incorporation of data from the 1990 Census.

Appendix D

California State University and University of California Enrollment Projections Conducted by the Demographic Research Unit

THE Demographic Research Unit uses the following data in the preparation of statewide fall enrollment projections for the California State University and the University of California:

- Historical trends in participation rates;
- Recent enrollment trends;
- Current admissions policies;
- Population composition and demographic changes;
- The proportional distribution of the sexes, age groups, and enrollment categories over projection years; and
- Projected trends in past series.

An age/sex participation rate model is currently used. Historical enrollment systemwide is maintained by sex, five age groups, and undergraduate-graduate levels of enrollment. Participation rates for each of the resulting categories of enrollment are derived by dividing enrollment by the corresponding population projection for that age/sex group and multiplying by 1000. The age groups for the population and enrollment are:

Enrollment	Population
19 and under	18-19
20-24	20-24
25-29	25-29
30-34	30-34
35 and over	35-64

A linear least squares regression is one analytical tool used in the process and is performed on a ten-year history of participation rates. In those instances where recent trends appear to be departing from the long-term trend or where the regression line is not a reliable predictor of actual values, greater weight is given to the recent participation rates and enrollment trends. Recent short-term trends in participation rates may be continued or modified for the few years of the projection, and then held constant, for example. Projected total enrollment is the sum of projected enrollment for each category.

A spreadsheet showing an evaluation of the "goodness of fit" of the regression line and producing several models of projected participation rates is generated for the initial analysis.

The following explains the current models:

0: The least squares regression line is determined by the historical participation rates. The projection starts at the Y estimate for the last historical year.

1, 2, and F: Modified least squares regression lines start at the last historical participation rate for the projection. The participation rate for each projected year is calculated by multiplying the slope of the least squares line by a given value and adding that product to the participation rate of the previous year. The multipliers for each projection year are:

	Model 1	Model 2	Model F
1st Year	.8	.4	.2
2nd	.65	.35	.175
3rd	.6	.3	.15
4th	.55	.25	.125
5th	.5	.2	.1
6th	.25	.15	.075
7th	.125	.1	.05
8th	.0625	.05	.025
9th	.03125	.0	.0
10th	.015625	0	.0

The Demographic Research Unit is in the process of evaluating its current projection model and developing a more comprehensive alternate model which could include, for example, greater age detail and separate projections for first-time, transfer, and continuing students.

Appendix E

Methodology for the Preliminary Enrollment Projection for the California State University Growth Plan, 2005-06

THE following projection of California State University headcount and full-time equivalent (FTE) enrollment in 2005-06 is based on California population projections and State University participation rate projections:

Students	Headcount	FTE
Undergraduate	465,500	368,100
Graduate	75,800	37,900
Total	541,300	406,000

The population projections, by ethnic group, are from the Department of Finance, Demographic Research Unit, "Projected Total Population for California by Race/Ethnicity," Report 88 P-4, February 1988. The ethnic groups are "Asian/Other," "Black," "Hispanic," and "White."

The participation rates are based on State University experience. The rates were projected by using one-half the average rate of change observed over the past two years (i.e., 1986-87 to 1987-88 and 1987-88 to 1988-89) to adjust the rates for the next two years (i.e., for 1989-90 and 1990-91). The rates were held constant thereafter through 2005-06.

The projection was made by applying the adjusted Asian rates to the Asian/Other population and applying the adjusted white rates to the Black, Hispanic, and White population.

Appendix F

K-12 Enrollment and High School Graduation Projections Conducted by the Demographic Research Unit

A cohort survival model approach is the methodology used for projecting enrollment in grades kindergarten through twelfth grade and high school graduates. A grade progression ratio (the educational "survival rate") is multiplied by projected enrollment in one year to calculate estimated enrollment in the next grade level for the next year of the projection series.

Three key data sets are required for calculating these projections:

1. *Actual graded enrollment data:* The CBEDS Unit of the State Department of Education provides graded enrollments by county for the past ten years.
2. *Actual and projected birth data:* Actual births are collected from the Department of Health Services, Health Data Statistics Branch. The Department of Finance, Demographic Research Unit, utilizes its own estimates for projected births.
3. *Actual grade progression ratios:* Actual grade progression ratios are generated by calculating the ratio of enrollment in one grade to the enrollment in the previous grade for the preceding year.

Nine approaches are currently utilized for applying actual grade progression ratios into future years of a projection series:

1. Last year's rate. This method assumes the latest available grade progression ratios will be used for each year of the projection period.
2. Five year average. This method calculates the average actual grade progression ratio over the past five years for each grade and assumes that the resulting rates will hold constant for each year of the projection period.
3. Weighted average. This method calculates the weighted average change in actual grade progression ratios over the past three years for each grade and assumes that the resulting rates will hold constant for each year of the projection period.
4. Applying the last historical grade progression ratios (model 1) at the beginning of the projection period, then merging to the five-year average (model 2) over the ten-year projection period.
5. Applying the last historical grade progression ratios (model 1) at the beginning of the projection period, then merging to the three-year weighted average (model 3) over the ten-year projection period.
6. Applying the three-year weighted average grade progression ratios (model 3) at the beginning of the projection period, then merging to the five-year average (model 2) over the ten-year projection period.
7. Computing the slope of the least-squares regression from the last ten years of historical grade progression ratios and applying it to ratios over the ten-year projection period.
8. Computing the slope of the least-squares regression from the most recent five years of historical grade progression ratios and applying it to the ratios used over the first five years of the projection, then holding the ratios constant.
9. Computing the slope of the least-squares regression from the most recent three years of historical grade progression ratios and applying it to the ratios during the first three years of the projection, then holding the ratios constant.

The Demographic Research Unit of the Department of Finance utilizes the following methodology for projecting enrollment from kindergarten through twelfth grade, including high school graduates:

Actual or projected births in a given year are lag-

ged by six years to calculate a birth to first grade progression ratio, which controls for anticipated mortality and migration. This calculation generates the entering first grade class for one year of the projection series. Projected enrollment in the second grade is computed by multiplying the selected first to second grade progression ratio to the projected first grade enrollment for the preceding year to derive second grade enrollment. The same procedure is followed for all grade levels in the projection series.

An identical approach is utilized to calculate high school graduates as is used to project graded enrollments. Graduates are projected by multiplying enrollment in the twelfth grade by the most appropriate ratio of graduates to twelfth graders in the same academic year. Projected kindergarten enrollments are derived by taking projected first grade enrollment for a given year and dividing by an appropriate kindergarten to first grade progression ratio.

Appendix G

Community College Enrollment Projections for Capital Outlay Purposes Conducted by the Demographic Research Unit

THE enrollment projection model currently used by the California Department of Finance Demographic Research Unit to project fall enrollment for the California Community Colleges is an age/sex participation rate model which utilizes historical and projected county populations by age and sex and community college enrollment data by age, sex, and enrollment category. The population base for each community college district is the county or counties in which it is geographically located, minus any population present in military barracks or State institutions and full-time students in local four-year colleges. Population figures come from the baseline 1983 Population Projection Series of the Department of Finance, Demographic Research Unit. Enrollment data are extracted from the Fall CCAF-130 report submitted by the community college districts to the California Community Colleges Chancellor's Office. Ten years of historical data are available for the current projection.

For each district, enrollment is divided into the following categories:

1. Full-time day (credit)
2. Part-time day (credit)
3. Full-time evening (credit)
4. Part-time evening (credit)
5. Non-Credit

For each historical year, the five enrollment categories are divided into age groupings and related to a similar, though not always exact, population age distribution. The enrollment and corresponding population age groups by sex used are:

Enrollment	Population
19 and under	18-19
20-24	20-24
25-29	25-29
30-34	30-34
35 and over	35-64

Each comparison between the enrollment and population age group is expressed as a participation rate per 1,000 persons in the population age grouping for males and females. The participation rates for age/sex enrollment categories are extrapolated for 10 years using statistical techniques such as regression analysis. Where recent trends appear to be departing from long-term trends, or if the regression line is not a statistically reliable predictor, then greater weight is given to recent participation rates and enrollment trends.

There are five basic models used to project participation rates (with capability of adding additional models). These computer-assisted models result in five different projection lines. Several models are needed to project participation rates because of the wide variation in types of historical curves found. If none of the graphed models seems appropriate it is possible to develop a curve from the available data or hold any participation rate constant. Recent techniques include the capability to set the beginning level for the projection curve, to leave out any year's data which seem spurious, and to have a number of options for extrapolating from an ending point in the projection curve. Attached is a list of available models.

Selection of which projection line to use is subjective with the analysts who use their expertise and knowledge of each district to select what seems to be the most appropriate model. In each year the selected participation rates are applied to the appropriate projected county population population age-sex category to produce an expected number for that enrollment category and age/sex group. These categories and age groups are then summed for each year to arrive at projected total enrollment.

Enrollment figures are one part of each projection, the other being Weekly Student Contact Hours (WSCH). These hours are projected for the summed enrollment categories of total day, total evening, and non-credit. Hours per student are calculated in each of the three categories for the historical years

and are trended forward for the 10 projected years. The WSCH/enrollment ratio for day students is varied, as the ratio of full-time day to total day students varies in the projections.

Weekly Student Contact Hour counts are taken from the annual CCAF-320 report submitted by the districts to the California Community College Chancellor's Office.

Model choices for community college capital outlay enrollment projections

Model and Description

0: Least squares regression line determined by the historical participation rates. Starts at *intercept* for the projection.

4: Least squares regression line. Starts at *last historical* participation rate. The slope of the least squares line is added to the last historical year's participation rate to derive the participation rate for the first year of the projection. The participation rate for the second year of the projection is calculated by adding the value of the slope to the previous year's participation rate. Subsequent projected participation rates are derived in the same manner.

1: Modified least squares regression line. Starts at *last historical* participation rate. The participation rate for each projected year is calculated by multiplying the slope of the least squares line by a given value and adding that product to the participation rate of the previous year. The multipliers are:

1st year of projection	.8
2nd	.65
3rd	.6
4th	.55
5th	.5
6th	.25
7th	.125
8th	.0625
9th	.03125
10th	.015625

2: Modified least squares regression line. Starts at *last historical* participation rate. The participation rates for the projected years are derived according to the same principle described in model 1. The multipliers for this model are:

1st year of projection	.4
2nd	.35
3rd	.3
4th	.25
5th	.2
6th	.15
7th	.1
8th	.05
9th & 10th	0

9: The value of the participation rate for the last historical year is kept constant for the 10 projected years. The value of the participation rate can be changed to any other value if analysis deems it necessary.

A	Average of model 1 and 4
B	Average of model 2 and 4
C	Average of model 9 and 4
D	Average of model 1 and 2
E	Average of model 1 and 9
F	Average of model 2 and 9

8: This model allows input of starting and ending participation rates for projected years. Several curves describe the yearly change in participation rate from the starting to the ending year of the projection. The difference between the starting and ending participation rate is calculated. For each year of the projection this difference is multiplied by a given value and the product is added to the *starting* participation rate. The multipliers are different for each curve. The curve represents the different assumptions underlying the change in participation rate from start to end of the projection. The starting rate of the projection is the *last historical* year's participation rate.

The ten available curves are shown on page 71.

Curve									
a	b	c	d	e	f	g	h	i	j
.50	.25	.50	.352	.253	.0	.0	.0	.0	.0
.60	.40	.60	.422	.333	.275	.400	.355	.175	.111
.70	.55	.65	.494	.416	.363	.488	.505	.278	.222
.80	.70	.70	.566	.499	.451	.576	.630	.381	.333
.85	.825	.75	.638	.582	.539	.664	.730	.484	.445
.90	.90	.80	.71	.665	.627	.752	.805	.578	.556
.95	1.0	.85	.782	.748	.751	.928	.855	.690	.667
1.0	1.0	.90	.854	.831	.803	1.0	.905	.793	.778
1.0	1.0	.95	.926	.914	.891	1.0	.955	.896	.889
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Appendix H

Estimates of Community College District Demographic Factors and Annual Percent Change in Adult Population

THE Department of Finance has been authorized to estimate the adult population and the annual percent change in adult population for all 71 California Community College districts. Within the Department, the Demographic Research Unit annually estimates allowable statewide Average Daily Attendance (ADA) growth for budgeting purposes by conducting a statutorily defined estimate of percentage change in the statewide adult population. These percentages are used in a formula that calculates the amount of ADA growth that the State will fund. ADA is an accounting unit to measure hours of instruction. ADA in the community colleges is measured by applying the statutory formula in which 478 hours of "seat time" (actual class attendance time) equals one ADA. The 478 hour figure is derived by taking 525 hours (a figure equal to one student taking a full class load for one year) and multiplying it by an "absence factor" of .911, or the percentage of students who are generally absent each day. This authorization was enacted by Senate Bill 1641.

Section 2228(1)(a) of the Revenue and Taxation Code requires that the Department mail to California Community Colleges the estimated percent changes by May 15 of each year. By January 1, the estimates of the percent change in adult population are calculated for the current and preceding year. The estimates of adult population for the current year are referred to as "Demographic Factors." They are mailed shortly after the percent-change report. The adult population is defined as those over the age of 18 years, excluding populations in the military, California Youth Authority, Department of Corrections, and full-time students attending four-year institutions that have 3,000 or more total students.

The Demographic Research Unit controls their own estimates of adult population to those from the Department's "E-1" estimates of total population for January 1 of the current and preceding years. These are adjusted by subtracting the under-18 population. The Unit analyzes school enrollment data and the Department's Baseline 1986 population proportions to make estimates of those under-18 population, and subtract it from the "E-1" estimates. The resulting adult population is further adjusted at the community college district level to subtract the legislated population exclusions. Because community college district boundaries are not coterminous with county boundaries in most instances, the Unit distributes the estimated adult population for counties to community college districts. To determine what proportion of a county's population goes to which district, the Unit looks at five indicators by county:

1. *Registered voters by community college districts*

By February, the first indicator the Unit receives each year is the number of registered voters by community college districts as of January 1. It is obtained through a survey. The Unit does not receive data on registered voters below the community college districts level. The four remaining indicators contain data by zip code, which is then aggregated into community college districts for each county. The Unit uses the community college to zip code correspondence file to accomplish this information which is updated annually.

2. *Residential postal drops*

By March, the next indicator the Unit receives is the number of residential postal drops for each zip code as of January 1. This data is also obtained by survey.

3. *Driver's licenses issued by the Department of Motor Vehicles*

By the end of March, the remaining three indicators are usually received. The Department of Motor

Vehicles provides the Unit with a tape listing the total cumulative number of drivers's licenses issued as of January 1.

4 and 5. *State and federal income taxpayers*

The Unit receives the last two indicators from State and federal taxpayers in tape form. These data are for the previous tax year. For example, since taxpayers filed 1986 taxes in 1987, the Unit uses it as an indicator for the 1987 proportions. The Unit will not have tax indicator data for 1988 until the next cycle. For all of the other indicators, the Unit has 1988 data already. There is a year's lag for the two tax data. Therefore, the Unit moves trend proportions forward to produce a 1988 indicator. Due to the fact that taxpayer data are actual for only one of the two years, emphasis in analysis of county proportions is given to the other three indicators.

The Unit has data for all of the indicators back to 1977, except for the Department of Motor Vehicle which goes back to 1978. The Unit also has the 18-and-over population total as of the 1980 Census by zip code. The Unit was able to develop 1980 Census proportions of community college districts by county, by aggregating these data with the zip code to community college district correspondence file and with the community college district to K-12 school district correspondence file. The census-based proportions are of help to the Unit in evaluating indicators' proportions. Each indicator is not a true reflection of a community college district's adult population proportions. For example, one community college district may have fewer of its population registered as voters than another community college district. Its proportion of registered voters will therefore be smaller than its proportion of the county's adult population. The 1980 Census proportions help the Unit determine the indicators' bias as of 1980, although, of course, this bias can change over time. For example, continuing with voter registration, a voter registration drive or purge could affect the indicator's proportions and its bias. This is why the Unit feels more comfortable using more indicators than just one, hoping that influences other than population which may alter proportions over time will tend to balance out. The Unit also evaluates each indicator by graphing them over several years to see where sudden changes in proportions occur. The Unit then evaluates deviations that are not apparent in the other indicators and are probably attributable to something other than population change.

Appendix I

California State University Enrollment Projection Methodology for Setting Campus Enrollment Allocations

THE California State University relies upon one set of officially adopted enrollment projections, known as "enrollment allocations," for academic planning purposes and as the basis for its annual support and capital outlay budget requests.

Initial State University enrollment projections are prepared in late spring by the Demographic Research Unit of the Department of Finance, based on population projections and projected participation rates. The Division of Analytic Studies in the Office of the Chancellor also makes system enrollment projections covering the same time period, based on the same population projections but using participation rates and student continuation rates. The Chancellor's projections are made in early winter based on fall enrollment data. The projections are similar but not identical. The projections made by the Office of the Chancellor were initially undertaken during a period in the early 1980s when the State University's actual enrollments exceeded the Department of Finance's projections.

The computer model used to generate the State University's projections was developed by the Division of Analytic Studies and is known as the "California Higher Education Enrollment Projection" model (CHEEP). Projections of undergraduate enrollments are made by the model based upon:

1. Projections of the State's population by age and gender as provided by the Demographic Research Unit.
2. A set of participation rates for first-time students stratified by age, sex, and entering status (first-time freshman or undergraduate transfer).
3. A set of continuation rates that represent the proportion of undergraduate enrollments that continue to attend in the following year. These continuation rates are also stratified by age and sex.
4. The California Higher Education Enrollment Projection model uses fall data to project fall headcount enrollment. It then converts headcount to fall full-time-equivalent enrollment using student workload factors. Fall full-time-equivalent enrollment is then converted to academic year full-time-equivalent based on fall to academic year experience

The student data used in the model are based on fall term census reports from 1980 to the present. The data source is the State University's Enrollment Reporting System (ERS).

The population projections prepared by the Demographic Research Unit are age and sex specific. Groups are projected for each year of age for ages 17 through 24 then in five year increments for ages 25 plus, e.g., 25-29, 30-34, etc.

Historic participation rates are calculated in the California Higher Education Enrollment Projection model by dividing reported age and gender specific enrollment totals (first-time freshman, undergraduate transfers) by the State population estimates for the same age and gender categories. Continuation rates are calculated by taking the ratio of one year's continuing students to the total enrollments of the previous year. Thus the model projects a given year's undergraduate enrollment by applying participation rates to the population estimate for the year to obtain projected new students (first time freshman and undergraduate transfers). Continuation rates are applied to last year's total enrollment to obtain continuing undergraduates. Total undergraduate enrollment for the given year is the sum of new students and continuing students.

The model allows the calculation and use of alternative participation and continuation rates, student workload factors and Fall to academic year ratios. Recent experience and professional judg-

ment are the primary basis for determining the particular parameters used.

Projections of post-baccalaureate and graduate enrollments are made in the model using the same technique as for undergraduates except there is no need to project a transfer student sub-group. The total enrollment projection is the sum of undergraduate and post-baccalaureate/graduate enrollments.

CALIFORNIA POSTSECONDARY EDUCATION COMMISSION

THE California Postsecondary Education Commission is a citizen board established in 1974 by the Legislature and Governor to coordinate the efforts of California's colleges and universities and to provide independent, non-partisan policy analysis and recommendations to the Governor and Legislature.

Members of the Commission

The Commission consists of 15 members. Nine represent the general public, with three each appointed for six-year terms by the Governor, the Senate Rules Committee, and the Speaker of the Assembly. The other six represent the major segments of postsecondary education in California.

As of April 1989, the Commissioners representing the general public are:

Mim Andelson, Los Angeles;
C. Thomas Dean, Long Beach;
Henry Der, San Francisco;
Seymour M. Farber, M.D., San Francisco;
Helen Z. Hansen, Long Beach;
Lowell J. Paige, El Macero; *Vice Chair;*
Cruz Reynoso, Los Angeles;
Sharon N. Skog, Palo Alto; *Chair;* and
Stephen P. Teale, M.D., Modesto.

Representatives of the segments are:

Yori Wada, San Francisco; appointed by the Regents of the University of California;

Theodore J. Saenger, San Francisco; appointed by the Trustees of the California State University;

John F. Parkhurst, Folsom; appointed by the Board of Governors of the California Community Colleges;

Harry Wugalter, Thousand Oaks; appointed by the Council for Private Postsecondary Educational Institutions;

Francis Laufenberg, Orange; appointed by the California State Board of Education; and

James B. Jamieson, San Luis Obispo; appointed by the Governor from nominees proposed by California's independent colleges and universities.

Functions of the Commission

The Commission is charged by the Legislature and Governor to "assure the effective utilization of public postsecondary education resources, thereby eliminating waste and unnecessary duplication, and to promote diversity, innovation, and responsiveness to student and societal needs."

To this end, the Commission conducts independent reviews of matters affecting the 2,600 institutions of postsecondary education in California, including community colleges, four-year colleges, universities, and professional and occupational schools.

As an advisory planning and coordinating body, the Commission does not administer or govern any institutions, nor does it approve, authorize, or accredit any of them. Instead, it cooperates with other State agencies and non-governmental groups that perform these functions, while operating as an independent board with its own staff and its own specific duties of evaluation, coordination, and planning.

Operation of the Commission

The Commission holds regular meetings throughout the year at which it debates and takes action on staff studies and takes positions on proposed legislation affecting education beyond the high school in California. By law, the Commission's meetings are open to the public. Requests to speak at a meeting may be made by writing the Commission in advance or by submitting a request prior to the start of the meeting.

The Commission's day-to-day work is carried out by its staff in Sacramento, under the guidance of its executive director, Kenneth B. O'Brien, who is appointed by the Commission.

The Commission publishes and distributes without charge some 40 to 50 reports each year on major issues confronting California postsecondary education. Recent reports are listed on the back cover.

Further information about the Commission, its meetings, its staff, and its publications may be obtained from the Commission offices at 1020 Twelfth Street, Third Floor, Sacramento, CA 98514-3985; telephone (916) 445-7933.

PLANNING OUR FUTURE

California Postsecondary Education Commission Report 89-15

ONE of a series of reports published by the Commission as part of its planning and coordinating responsibilities. Additional copies may be obtained without charge from the Publications Office, California Postsecondary Education Commission, Third Floor, 1020 Twelfth Street, Sacramento, California 95814-3985.

Recent reports of the Commission include:

88-45 Prepaid College Tuition and Savings Bond Programs: A Staff Report to the California Postsecondary Education Commission (December 1988)

89-1 Legislative Priorities for the Commission, 1989: A Report of the California Postsecondary Education Commission (January 1989)

89-2 The Twentieth Campus: An Analysis of the California State University's Proposal to Establish a Full-Service Campus in the City of San Marcos in Northern San Diego County (January 1989)

89-3 Toward Educational Equity: Progress in Implementing the Goals of Assembly Concurrent Resolution 83 of 1984: A Report to the Legislature in Response to Assembly Bill 101 (Chapter 574, Statutes of 1987) (January 1989)

89-4 The Effectiveness of the Mathematics, Engineering, Science Achievement (MESA) Program's Administrative and Policy-Making Processes: A Report to the Legislature in Response to Assembly Bill 610 (1985) (January 1989)

89-5 Comments on the Community Colleges' Study of Students with Learning Disabilities: A Report to the Legislature in Response to Supplemental Report Language to the 1988 State Budget Act (January 1989)

89-6 Prospects for Accommodating Growth in Postsecondary Education to 2005: Report of the Executive Director to the California Postsecondary Education Commission, January 23, 1989 (January 1989)

89-7 State Budget Priorities of the Commission, 1989: A Report of the California Postsecondary Education Commission (March 1989)

89-8 Status Report on Human Corps Activities, 1989: The Second in a Series of Five Annual Reports to the Legislature in Response to Assembly Bill 1820 (Chapter 1245, Statutes of 1987) (March 1989)

89-9 A Further Review of the California State University's Contra Costa Center (March 1989)

89-10 Out of the Shadows -- The IRCA/SLIAG Opportunity: A Needs Assessment of Educational Services for Eligible Legalized Aliens in California Under the State Legalization Impact Assistance Grant Program of the Immigration Reform and Control Act of 1986, submitted to the California Postsecondary Education Commission, February 23, 1989, by California Tomorrow (March 1989)

89-11 Faculty Salaries in California's Public Universities, 1989-90: A Report to the Legislature and Governor in Response to Senate Concurrent Resolution No. 51 (1965) (March 1989)

89-12 Teacher Preparation Programs Offered by California's Public Universities: A Report to the Legislature in Response to Supplemental Language in the 1988 State Budget Act (March 1989)

89-13 The State's Reliance on Non-Governmental Accreditation: A Report to the Legislature in Response to Assembly Concurrent Resolution 78 (Resolution Chapter 22, 1988) (March 1989)

89-14 Analysis of the Governor's Proposed 1989-90 Budget: A Staff Report to the California Postsecondary Education Commission (March 1989)

89-15 Planning Our Future: A Staff Background Paper on Long-Range Enrollment and Facilities Planning in California Public Higher Education (April 1989)

89-16 Standardized Tests Used for Higher Education Admission and Placement in California During 1988: The Fourth in a Series of Annual Reports Published in Accordance with Senate Bill 1758 (Chapter 1505, Statutes of 1984) (April 1989)

89-17 Protecting the Integrity of California Degrees: The Role of California's Private Postsecondary Education Act of 1977 in Educational Quality Control (April 1989)

89-18 Recommendations for Revising the Private Postsecondary Education Act of 1977: A Report to the Legislature and Governor on Needed Improvements in State Oversight of Privately Supported Postsecondary Education (April 1989)

89-19 Mandatory Statewide Student Fees in California's Public Four-Year Colleges and Universities: Report of the Sunset Review Committee on Statewide Student Fee Policy Under Senate Bill 195 (1985), published for the Committee by the California Postsecondary Education Commission (April 1989)